PARAGON STAR VILLAGE 3200 NW Paragon Parkway, Lee's Summit, MO North Village Package - Final Development Plans - RESUBMITTAL

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LANDSCAPE

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ELECTRICAL

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- E100 NORTH VILLAGE SITE LIGHTING PLAN
- ELECTRICAL SPECIFICATIONS E200 E300 SITE LIGHTING PHOTOMETRICS

ARCHITECTURE

A101	FLOOR PLANS
A102	BUILDING ELEVATIONS

- PROJECT SITE (350) NE COLBERN RD SANNISTER RE 470 (470) NW CHIPMAN RD) 50 (SW 3RD ST = SW LONGVIEW RD SW SCHERER RD





GBA 9801 Renner Boulevard Lenexa, KS 66219 913.492.0400 www.gbateam.com MO Engnieering Corp 000133



Paragon Star, LLC 801 NW Commerce Drive Lee's Summit, MO 64086 855.802.6800 www.paragonstarusa.com



LAND3 Studio, LLC 317 SE Main Lee's Summit, MO 64063 816.207.6019 www.land3studio.com MO Landscape Arch Corp 2008001860



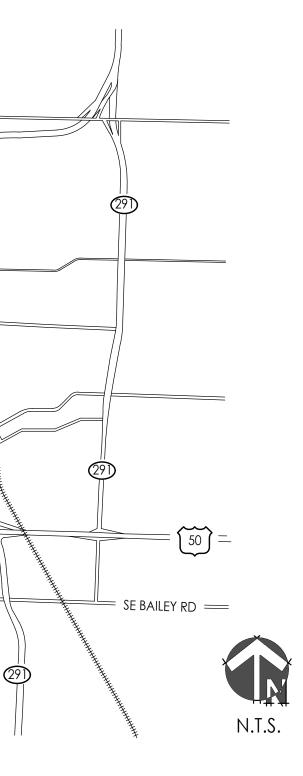
Henderson Engineers, Inc. 8345 Lenexa Drive Lenexa, KS 66214 913.742.5000 www.hei-eng.com MO Engineering Corp 000556

CIVIL ENGINEERING GRA 9801 Renner Boulevard Lenexa, KS 66219 913.492.0400 www.gbateam.com MO Certificate of Authority # 000133 LANDSCAPE ARCHITECTURE LAND3 Studio, LLC 317 SE Main Lee's Summit, MO 64063 www.land3studio.com MO Certificate of Authority # 2008001860 LANDSCAPE ARCHITECTURE Hoerr Schaudt Landscape Architects 2100 Central Street, Suite 01C Kansas City, MO 64108 816.510.0438 www.hoerrschaudt.com MO Certificate of Authority #2019004088 MEP ENGINEERING HENDERSON ENGINEERS, Inc 8345 Lenexa Drive Lenexa, KS 66214 913.742.5000 www.hei-eng.com Missouri Certificate of Authority # 000556 ARCHITECTURE FINKLE + WILLIAMS Architecture 8787 Renner Boulevard, Suite 100 Lenexa, KS 66219 913.498.1550 www.finklewilliams.com

Missouri Certificate of Authority #F00453304

PROJECT:

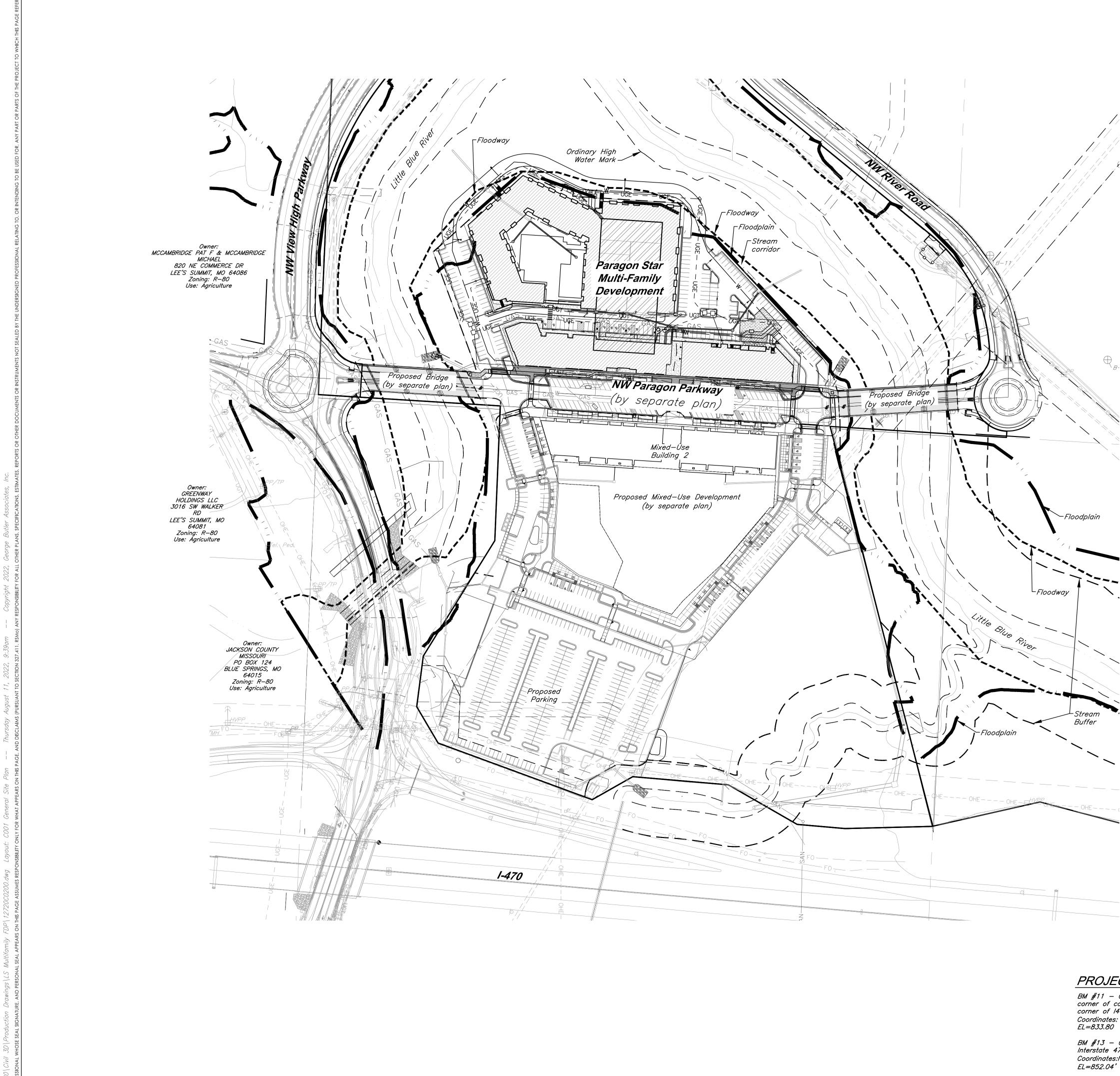
August 12, 2022





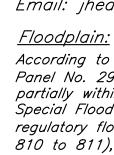
8787 Renner Blvd., Suite 100 Lenexa, KS 66219 913.498.1550 www.finklewilliams.com MO Architecture Corp 00453304

Paragon Star North Village	3200 NW Paragon Parkway, Lee's Summit, MO 64081	Final Development Plan
ISSUE:	ESUBMITT	AL 08.12.2022
PROFESSIONAL SEAL:		
DRAWING TITLE:)	
		SHEET
JOB NO: 1249 DATE: 01.28.2		CALE: RAWN BY: mrk



Prepared and Submitted By:





<u>Zoning:</u>

<u>Notes:</u>

Total S Lot 5 Ai Lot 6 A Lot 7A Lot 7B Lot 7C Lot 8 Ai Reside Retail Garage Use Zoning Setback Dwellin Bedroo Total Pa Regular ADA Pa



BM #11 – Chiseled "L" on top Northeast corner of concrete guardrail at the Northeast corner of 1470 bridge spanning View High Drive. Coordinates: N=1008590.33', E=2803864.07', EL=833.80

BM #13 – Chiseled "L" on NE corner of Interstate 470 and Cedar Creek Bridge Coordinates:N=1008342.79', E=2806758.22',

George Butler Associates, Inc. 9801 Renner Boulevard Lenexa, Kansas 66219 Phone: 913-492-0400 Fax: 913-577-8312 Contact: Jay Healy, P.E. Email: jhealy@gbateam.com

According to FEMA Flood Insurance Rate Map (FIRM) Community Panel No. 29095C0404G, effective Date 1/20/17, the tract lies partially within an area designated as Special Flood Hazard Areas. Special Flood Hazard Areas defined on portions of the site include regulatory floodway, Zone AE (with depths identified on site from 810 to 811), and 0.2% Annual Chance Flood Hazard Areas.

A CLOMR has been issued for this project, case number 20–07–0520R, dated 2/14/20. Proposed Floodplain/ Floodway refers to boundary set by this CLOMR.

PMIX – Planned Mixed Use

1. No oil or gas wells are located on site per Missouri Department of Natural Resources.

Land Use	
Site Area (AC)	19.63
Area (AC)	14.20
Area (AC)	0.72
Area (AC)	1.11
Area (AC)	0.69
Area (AC)	1.78
Area (AC)	1.13
ential Building Area (SF)	344,995
Building Area (SF)	35,232
e Area (SF	168,460
	Mixed Use
5	PMIX
ck	0
ng Units	374
om Count	426
Parking Spaces	660
ar Parking Spaces	647
arking Spaces	13

-Project Location View High Dr.-NE 1/4 NW 1/4 1-470 SE 1/4 SW 1/4 NW Chipman Road VICINITY MAP

GBA

9801 Renner Bou**l**evard Lenexa, KS 66219 913.492.0400

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Lee's Summit, MO 64063

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2100 Central Street, Suite 01C Kansas City, MO 64108 816.510.0438 www.hoerrschaudt.com

317 SE Main

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www.hei-eng.com Missouri Certificate of Authority # 000556

FINKLE + WILLIAMS Architecture

Missouri Certificate of Authority #F00453304

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8787 Renner Boulevard, Suite 100

8345 Lenexa Drive Lenexa, KS 66214

Lenexa, KS 66219

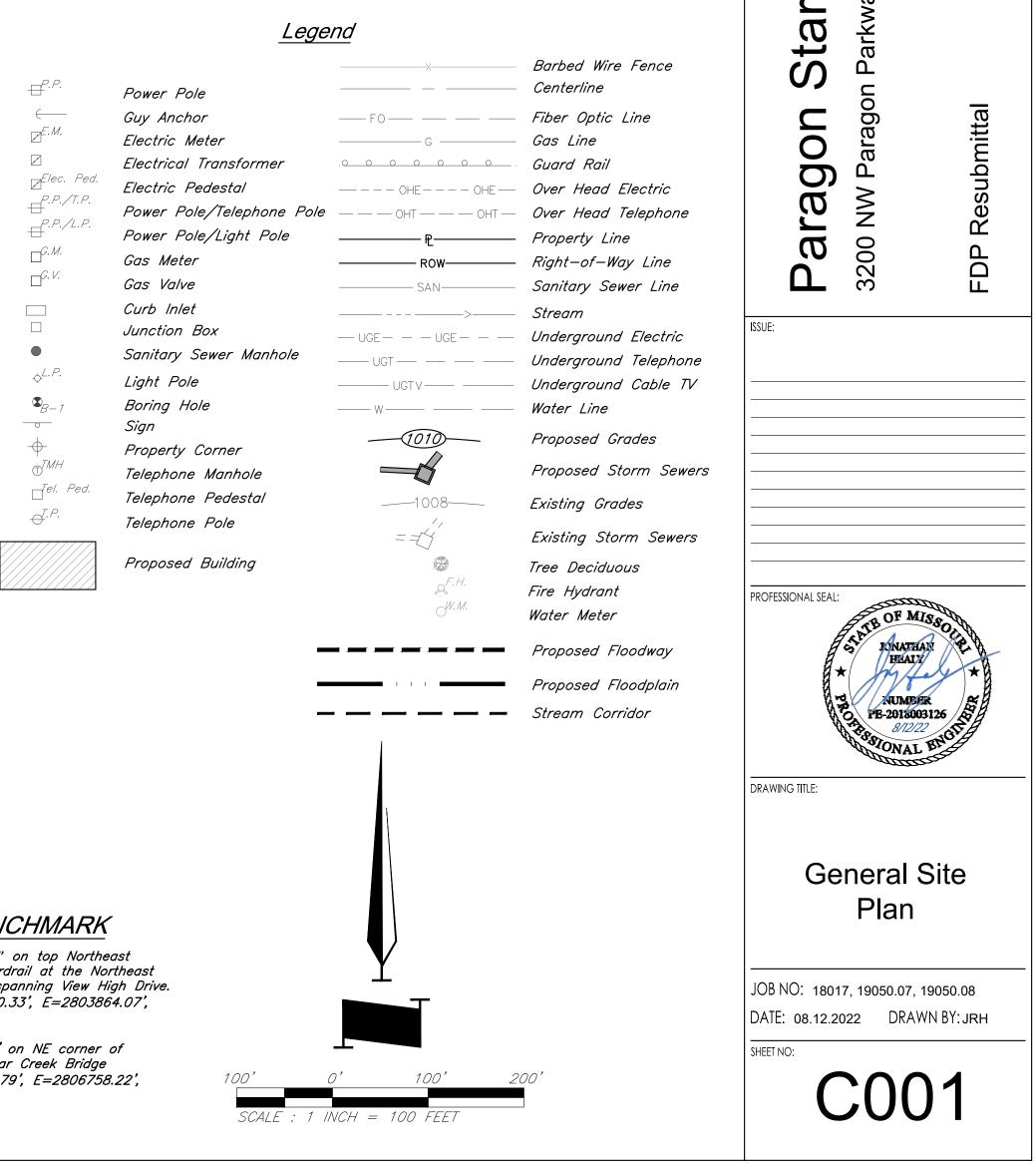
www.finklewilliams.com

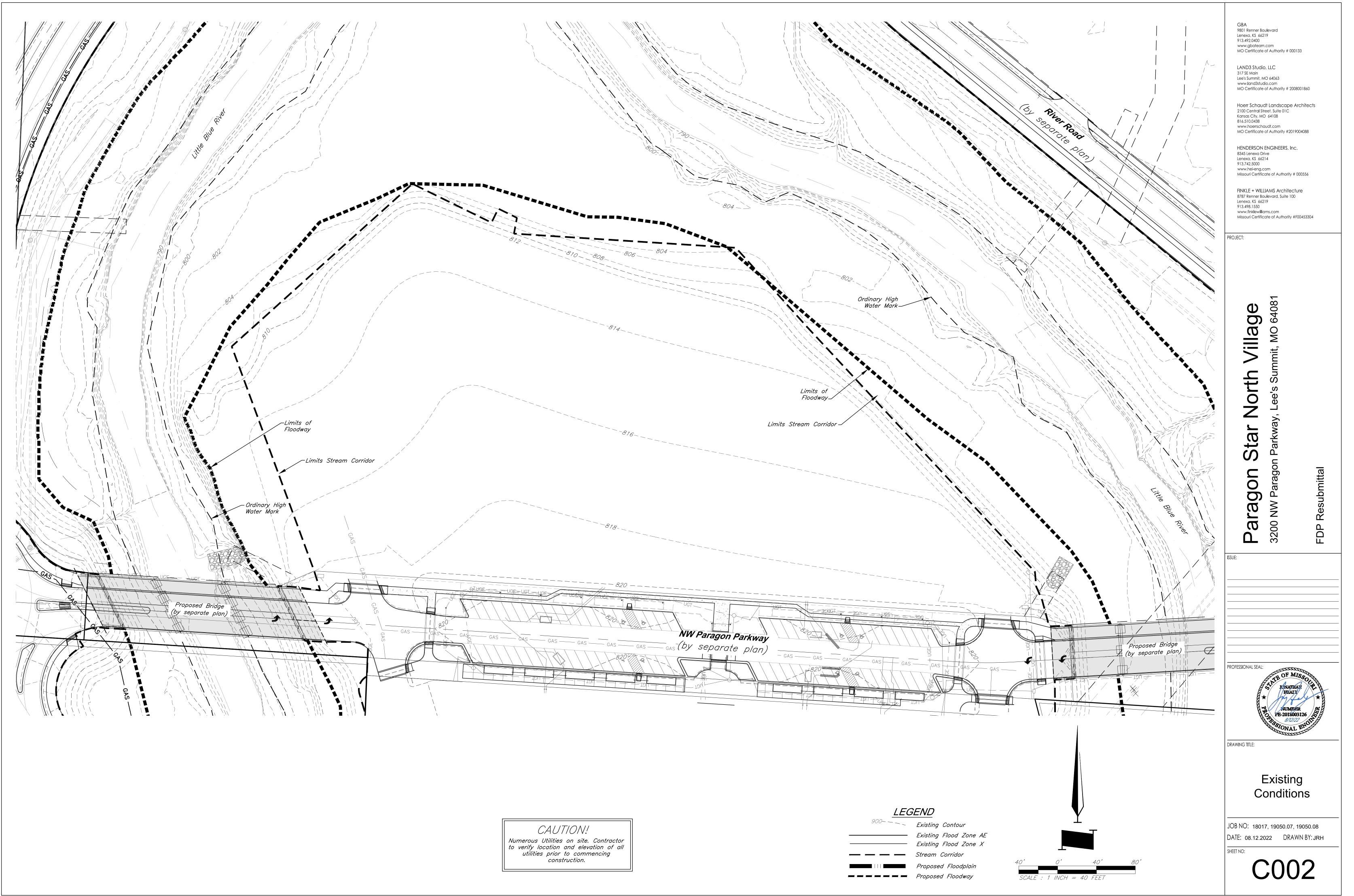
913.498.1550

PROJECT:

913.742.5000

Scale: 1"=2000'

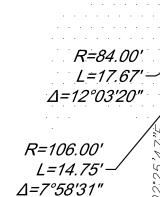




FDP BOUNDARY DESCRIPTION

A tract of land being all of Lot 2, Paragon Star First Plat, a subdivision in the North Half of Northwest Quarter of Section 34, Township 48 North, Range 32 West of the Fifth Principal Meridian, in the City of Lee's Summit, Jackson County, Missouri, more particularly described as follows:

Commencing at the Northwest Corner of the Northwest Quarter of said Section 34; thence South 02°25'47" West, along the West line of said Section, a distance of 895.66 feet, to a point on a non-tangent curve, said point also being the Point of Beginning; thence Northeasterly, departing said West line, along a curve to the right, having a radius of 648.00 feet, a central angle of 54°41'08", and an initial tangent bearing of North 15°06'40" East, a distance of 618.48 feet, to a point of tangency; thence North 69°47'48" East, a distance of 235.03 feet, to a point of curvature; thence Northeasterly and Southeasterly, along a curve to the right, having a radius of 84.00 feet, and a central angle of 91°10'09", a distance of 133.66 feet, to a point of tangency; thence South 19°02'03" East, a distance of 13.19 feet, to a point of curvature; thence Southeasterly, along a curve to the left, having a radius of 616.00 feet, a central angle of 18°21'00", a distance of 197.28 feet, to a point of compound curvature; thence Southeasterly, along a curve to the left, having a radius of 540.00 feet, a central angle of 13°19'41", a distance of 125.61 feet, to a point of tangency: thence South 50°42'44" East, a distance of 438.70 feet, to a point of curvature: thence Southeasterly, along a curve to the right, having a radius of 370.00 feet, and a central angle of 21°49'29", a distance of 140.94 feet, to a point of compound curvature; thence Southeasterly and Southerly, along a curve to the right, having a radius of 264.00 feet, and a central angle of 12°30'46", a distance of 57.65 feet, to a point of compound curvature; thence Southerly, along a curve to the right, having a radius of 368.00 feet, and a central angle of 13°59'23", a distance of 89.85 feet; thence South 01°25'13" East, a distance of 3.16 feet, to a point on a non-tangent curve; thence Southerly and Southwesterly, along a curve to the right, having a radius of 48.98 feet, a central angle of 56°47′34″, and whose initial tangent bearing is South 01°25'22" East, a distance of 48.55 feet, to a point of compound curvature; thence Southwesterly and Westerly, along a curve to the right, having a radius of 112.00 feet, and a central angle of 31°18'53", a distance of 61.21 feet, to a point of tangency; thence South 86°41'02" West, a distance of 214.11 feet; thence North 78°36'20" West, a distance of 41.68 feet; thence North 86°20'31" West, a distance of 743.41 feet; thence South 83°16'48" West, a distance of 64.46 feet; thence North 84°23'47" West, a distance of 159.95 feet, to a point of curvature; thence Westerly and Northwesterly, along a curve to the right, having a radius of 111.50 feet, and a central angle of 33°14'40", a distance of 64.69 feet, to a point of compound curvature; thence Northeasterly, along a curve to the right, having a radius of 84.00 feet, a central angle of 16°00'54", a distance of 23.48 feet, to a point of reverse curvature; thence Northwesterly, along a curve to the left, having a radius of 106.00 feet, a central angle of 07°58'31", a distance of N47°28'22"E 14.75 feet, to a point of reverse curvature; thence Northwesterly, along a curve to the right, having a radius of 84.00 feet, a central angle of 12°03'20", a distance of 17.67 feet, to a point on said West line; thence North 02°25'47" East, along said West line, a distance of 280.21 feet, to the Point of Beginning, containing 854,869.97 square feet or 19.63 acres, more or less.



RIN

- Mid

12735.27'

Coordinates Shown Hereon: Modified State Plane (Project Ground Coordinates), OPAN 33 JA-96

2403 – Missouri West, U.S. Feet Vertical - NAVD88, U.S. Feet

CAF=0.99990648 Coordinates x CAF = State Plane

 $CP \#100 - \frac{1}{2}$ " rebar with GBA cap on South side of View High Drive, 18' West of asphalt field entrance, approximately 975' North along the centerline of View High Drive from the ramp to West bound I-470.

<u>Coordinates:</u> N: 1009568.88

E: 2803498.54

- EL: 819.37'
- 1) North 4.15' to the South edge of asphalt of View High Drive

culvert for field entrance

- 2) East 18.00' to West edge of asphalt field
- entrance 3) South 27.50' to west end of 18" cmp
 - N: 1008400.01' E: 2804608.18' EL: 833.34'

 $CP \#102 - \frac{1}{2}$ " rebar with GBA cap along South side of East bound I-470, East of Bridge spanning View High Drive. <u>Coordinates.</u>

N: 1008463.46'

E: 2803878.88' EL: 829.94'

- 1) ENE 38.90' to centerline of steel highway reflector post, 1st post E. of bridge
- 2) North 9.50' to South edge of asphalt shoulder of East bound I-470
- 3) WNW 53.65' to top SE corner of concrete
- guardrail for I-470 bridge spanning View High Drive

CP #104 $-\frac{1}{2}$ " rebar with GBA cap along South edge of off ramp from East bound I-470 to View High Drive.

- Coordinates: N: 1008447.60
- E: 2803180.41'

<u>Coordinates:</u>

- EL: 822.96'
- 1) North 3.10' to South edge of asphalt of
- off ramp 2) WNW 3.00' to SE corner of concrete pad
- around state lighting control box
- 3) North 47.20' to SE corner of concrete pad around state lighting control box,
- North side of off ramp 4) East 530' \pm to centerline of View High Drive

 $CP \# 105 - \frac{1}{2}$ " rebar with GBA cap in grass between South edge of asphalt of East bound I-470 and the North edge of asphalt of East bound on ramp from View High Drive, at East end of grass area.

1) SW 8.64' to centerline of reflector post,

post, South side of I-470, East end of

2) East 52.40' to centerline of reflector

 $CP \# 106 - Set \frac{1}{2}$ " rebar with GBA cap, West

of View High Drive, South of entrance to

substation at 10528 View High Drive

North side of on ramp

- - <u>Coordinates:</u>
 - E: 2805047.90'
 - <u>Thes:</u> 1) SW 3.65' to center of MH lid
 - 2) WNW 14' \pm to power pole
 - 3) NW 35.65' to NE corner of chain link fence area
 - $CP \# 122 \frac{1}{2}$ " rebar with GBA cap approximately $1380' \pm NE$ of access road
 - "Future View High Drive Pkwy" from View High Drive
 - <u>Coordinates:</u> N: 1010126.48'
- E: 2803203.41' EL: 944.66'

N: 1006295.09'

<u>Coordinates:</u>

grass area

lies: 1) NE 62.75' to front face of curb inlet

3) NE 56.30' to center of MH lid $CP \# 121 - \frac{1}{2}$ " rebar with GBA cap

1) NW 3.60' to East edge of asphalt

2) N 28' \pm to center of gravel substation

 $CP \# 120 - \frac{1}{2}$ " rebar with GBA cap at NW

corner of View High Drive and access road

3) E 20' \pm to West edge of sidewalk

"Future View High Drive Pkwy"

approximately 1430'± ENE of access road "Future View High Drive Pkwy" from View High Drive, near MH #1055

2) West 51.44' to back of curb at nose of

N: 1009788.28'

entrance

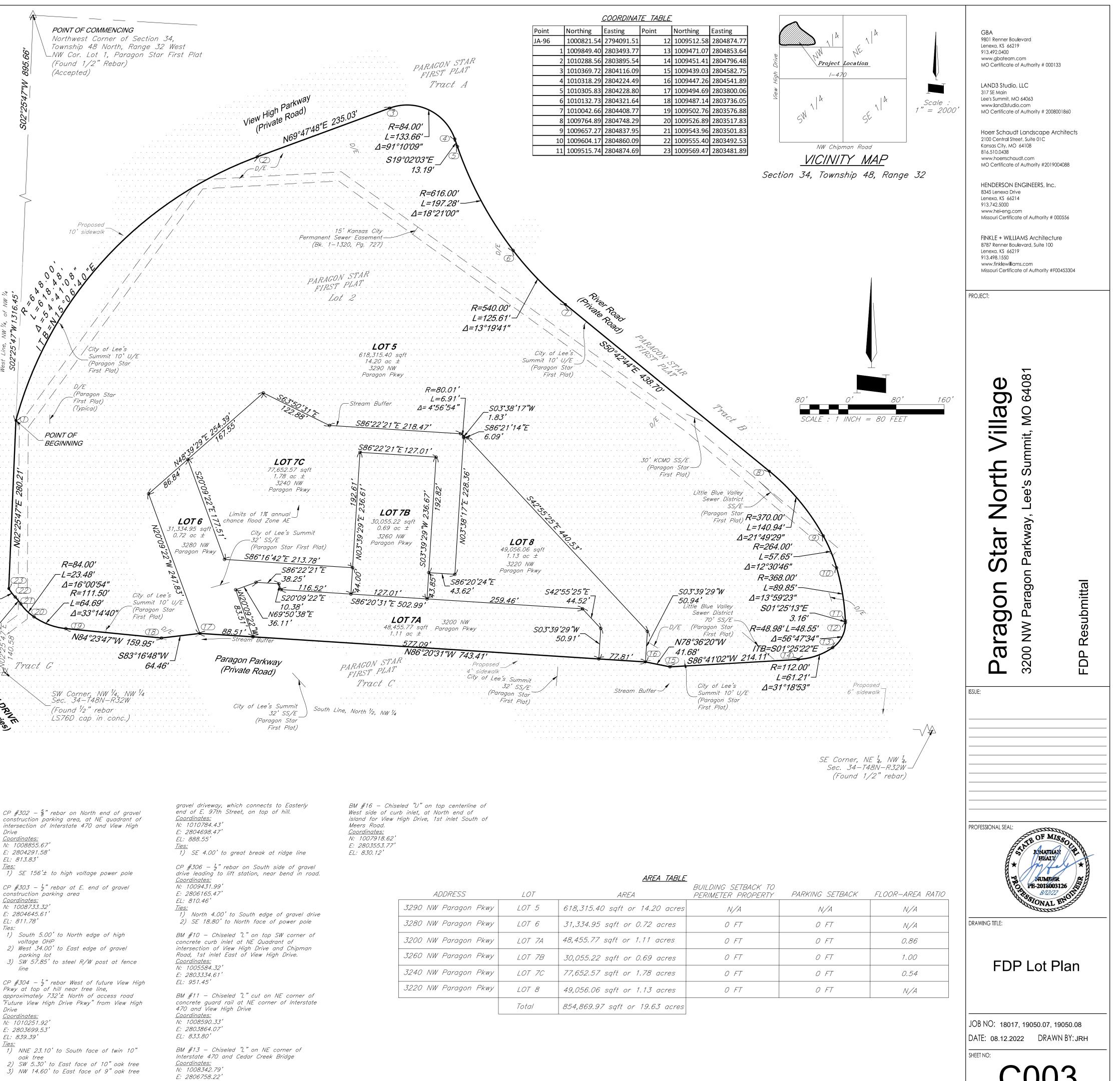
<u>Coordinates:</u>

EL: 811.46'

N: 1009573.66' E: 2803729.57'

- EL: 806.65'

- E: 2804884.88' EL: 813.20'
-) West 298'± to center of MH lid
- 2) South 199' \pm to center of MH lid



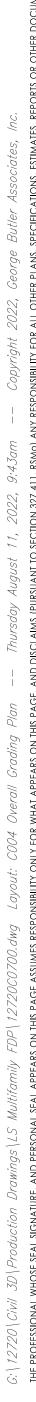
Pkwy at top of hill near tree line, approximately 732'± North of access road

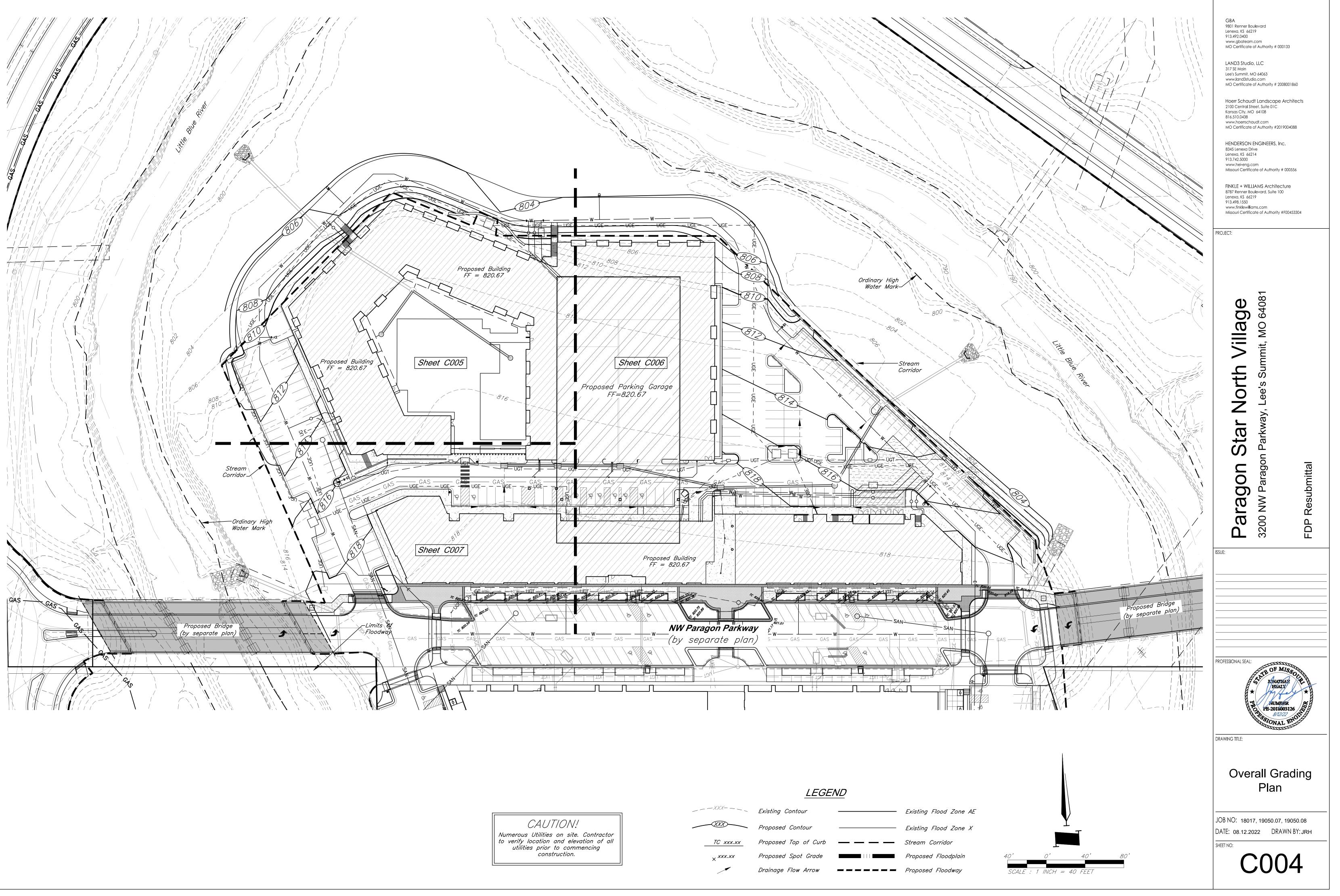
N: 1010251.92' E: 2803699.53'

CP #305 $-\frac{1}{2}$ " rebar South of dead end of

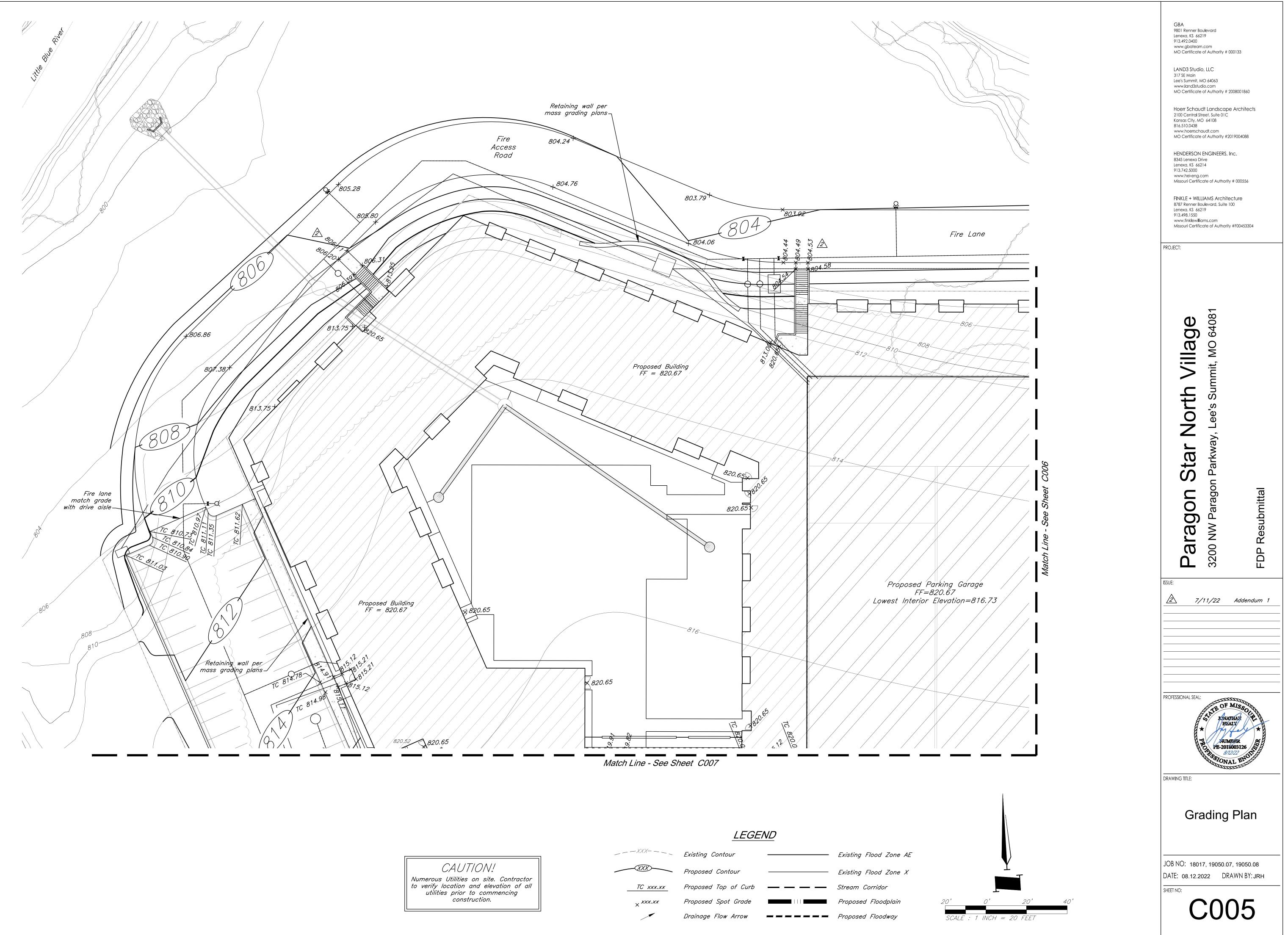
EL: 852.04'

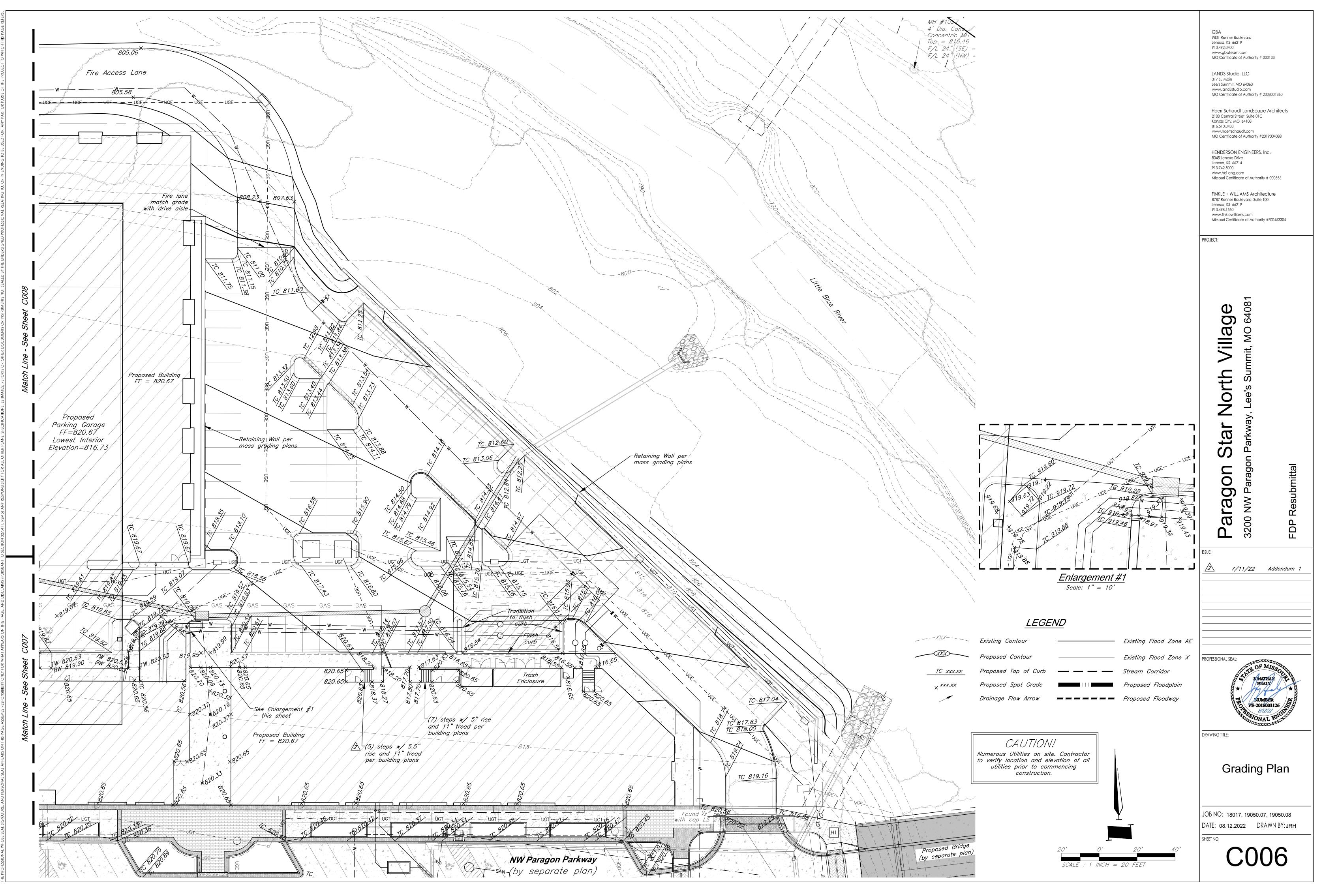
ADDRESS	LOT	
3290 NW Paragon Pkwy	LOT 5	618,315.40
3280 NW Paragon Pkwy	LOT 6	31,334.95 s
3200 NW Paragon Pkwy	LOT 7A	48,455.77 s
3260 NW Paragon Pkwy	LOT 7B	30,055.22 s
3240 NW Paragon Pkwy	LOT 7C	77,652.57 s
3220 NW Paragon Pkwy	LOT 8	49,056.06 s
	Total	854,869.97

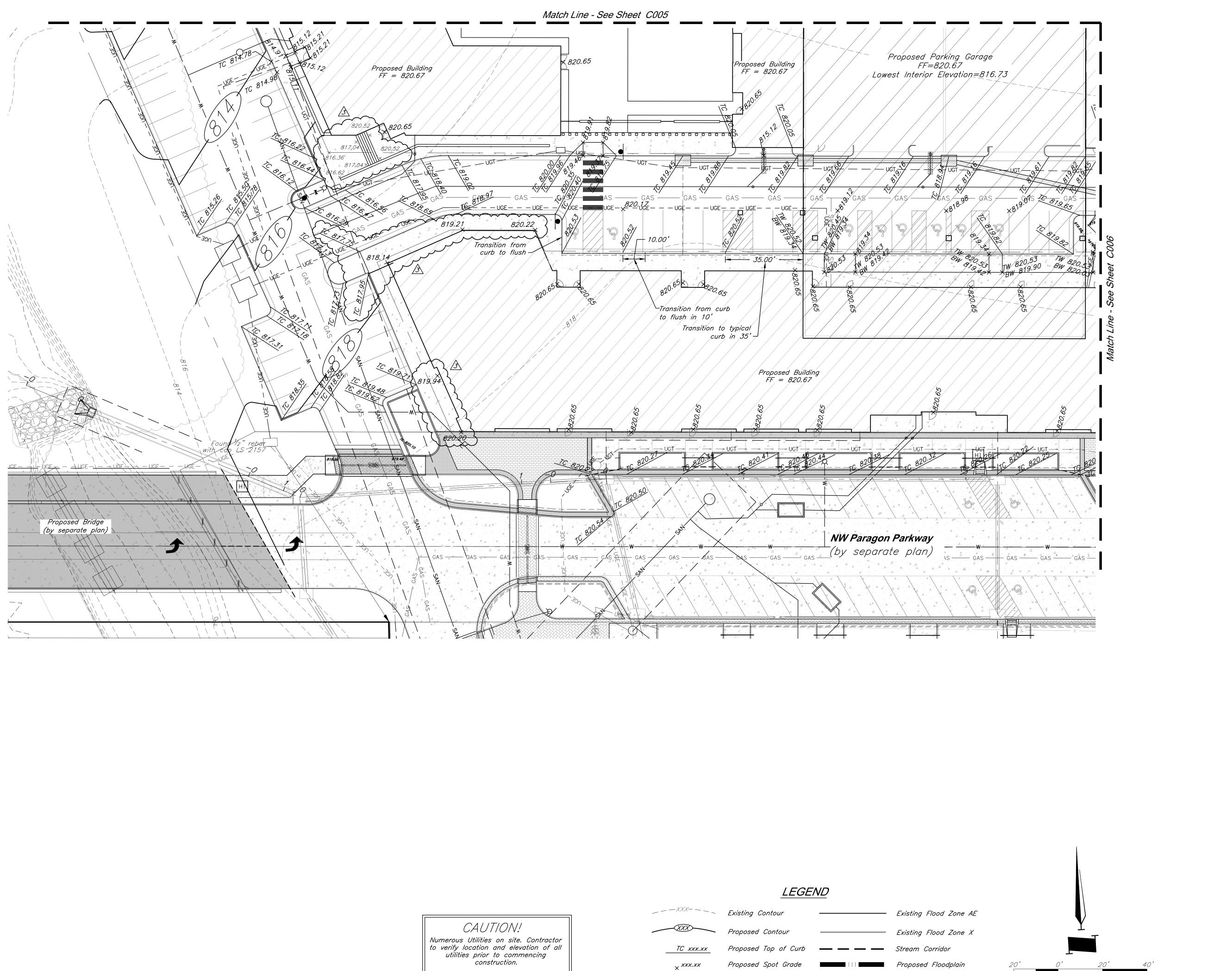




		LEGE	<u>END</u>	
	XX~	Existing Contour		- Exis
CAUTION!	XXX	Proposed Contour		- Exis
lumerous Utilities on site. Contractor	TCxxx.xx	Proposed Top of Curb		Stre
utilities prior to commencing construction.	×	Proposed Spot Grade		Pro
	×	Drainage Flow Arrow		Pro,







CAUTION!	
Numerous Utilities on site. Cor to verify location and elevation utilities prior to commenci construction.	n of all

Drainage Flow Arrow

Proposed Floodway

SCALE : 1 INCH = 20 FEET

8787 Renner Boulevard, Suite 100 Lenexa, KS 66219 913.498.1550 www.finklewilliams.com Missouri Certificate of Authority #F00453304 PROJECT: 6408 ge Villa 0 M jit. lorth S (1) Ζ tar S Paragon 3200 NW Parago FDP Resubmittal ISSUE: ß 7/20/22 Addendum 2 PROFESSIONAL SEAL: OF MIS NATHAN HEALY -2018003 DRAWING TITLE: Grading Plan JOB NO: 18017, 19050.07, 19050.08 DATE: 08.12.2022 DRAWN BY: JRH SHEET NO: C007

GBA

9801 Renner Boulevard

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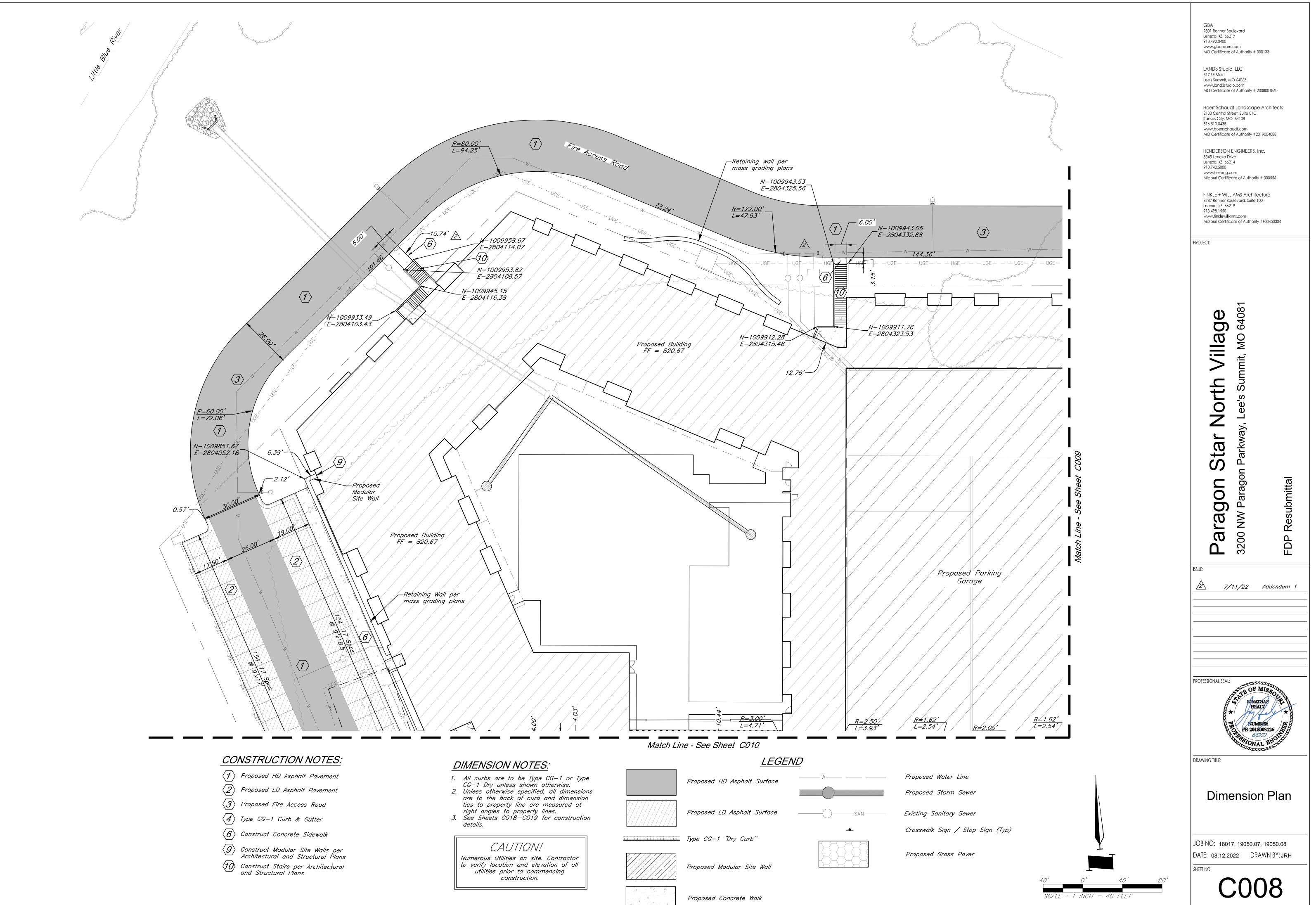
HENDERSON ENGINEERS, Inc.

www.hei-eng.com Missouri Certificate of Authority # 000556

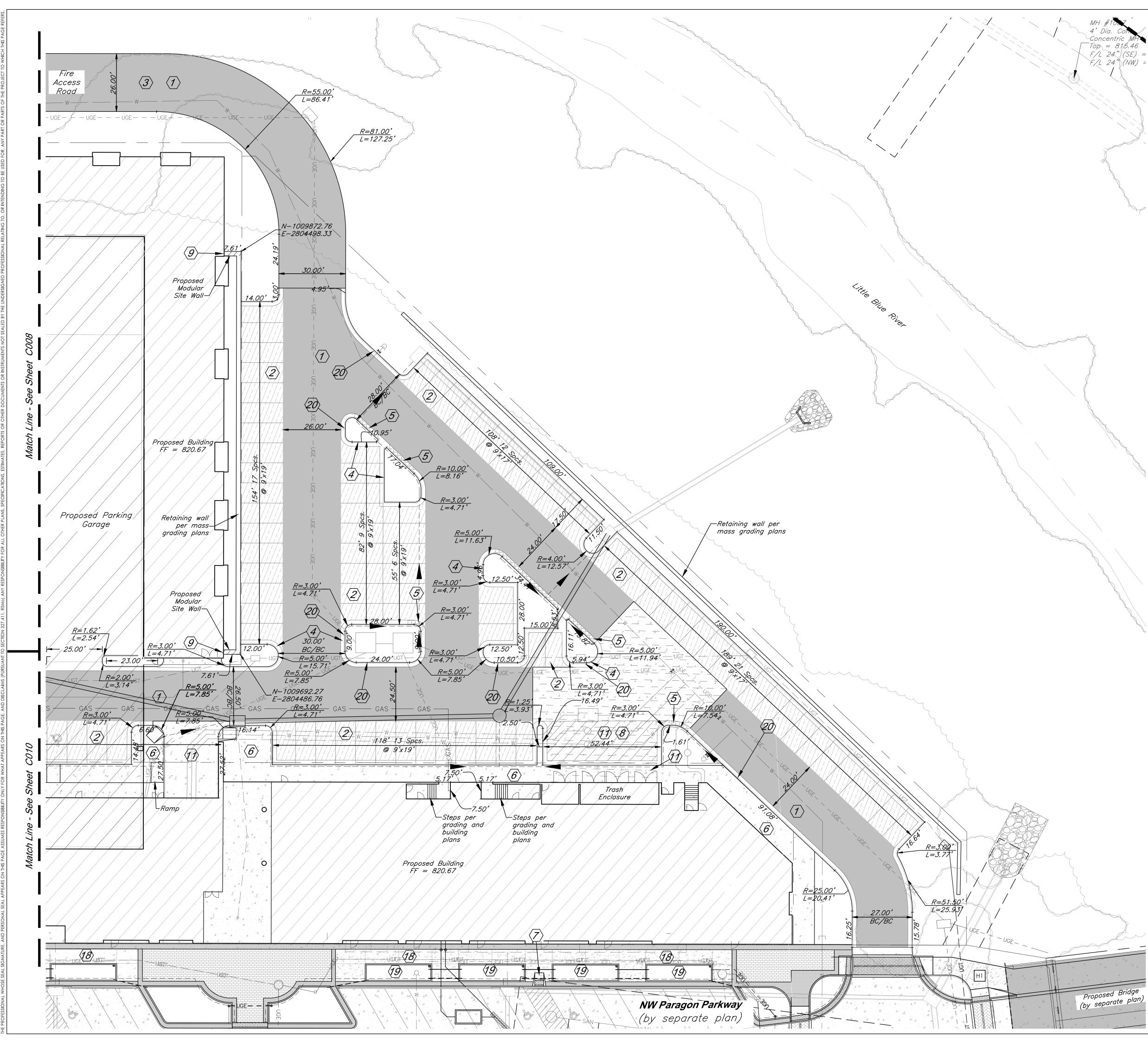
FINKLE + WILLIAMS Architecture

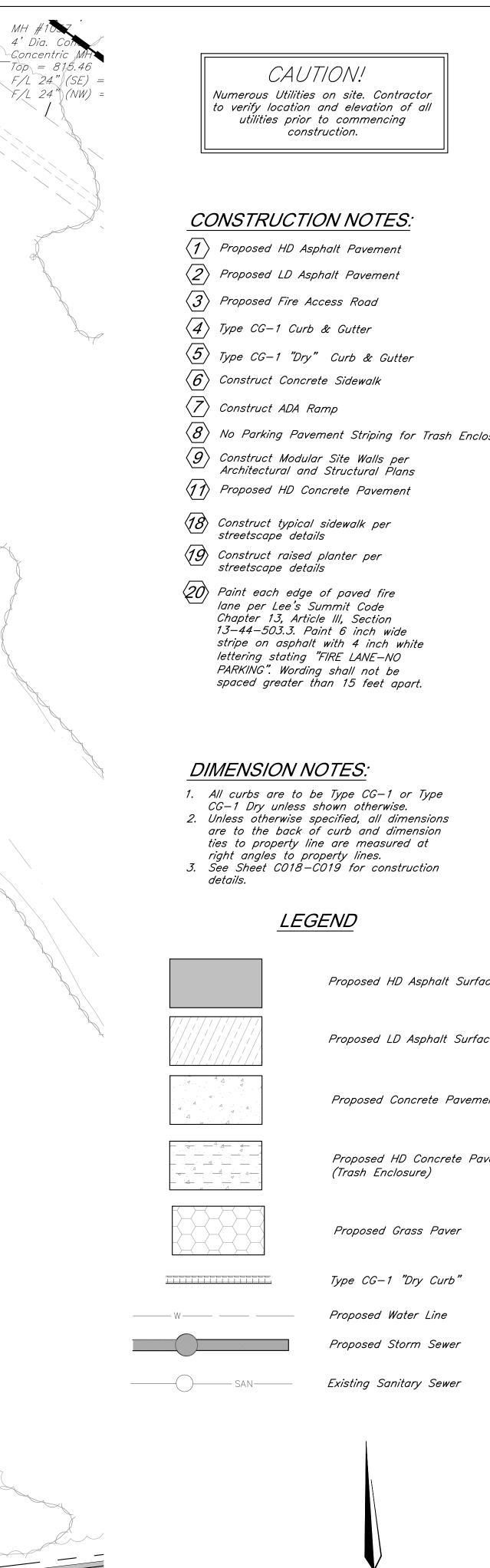
Hoerr Schaudt Landscape Architects

Lenexa, KS 66219 913.492.0400





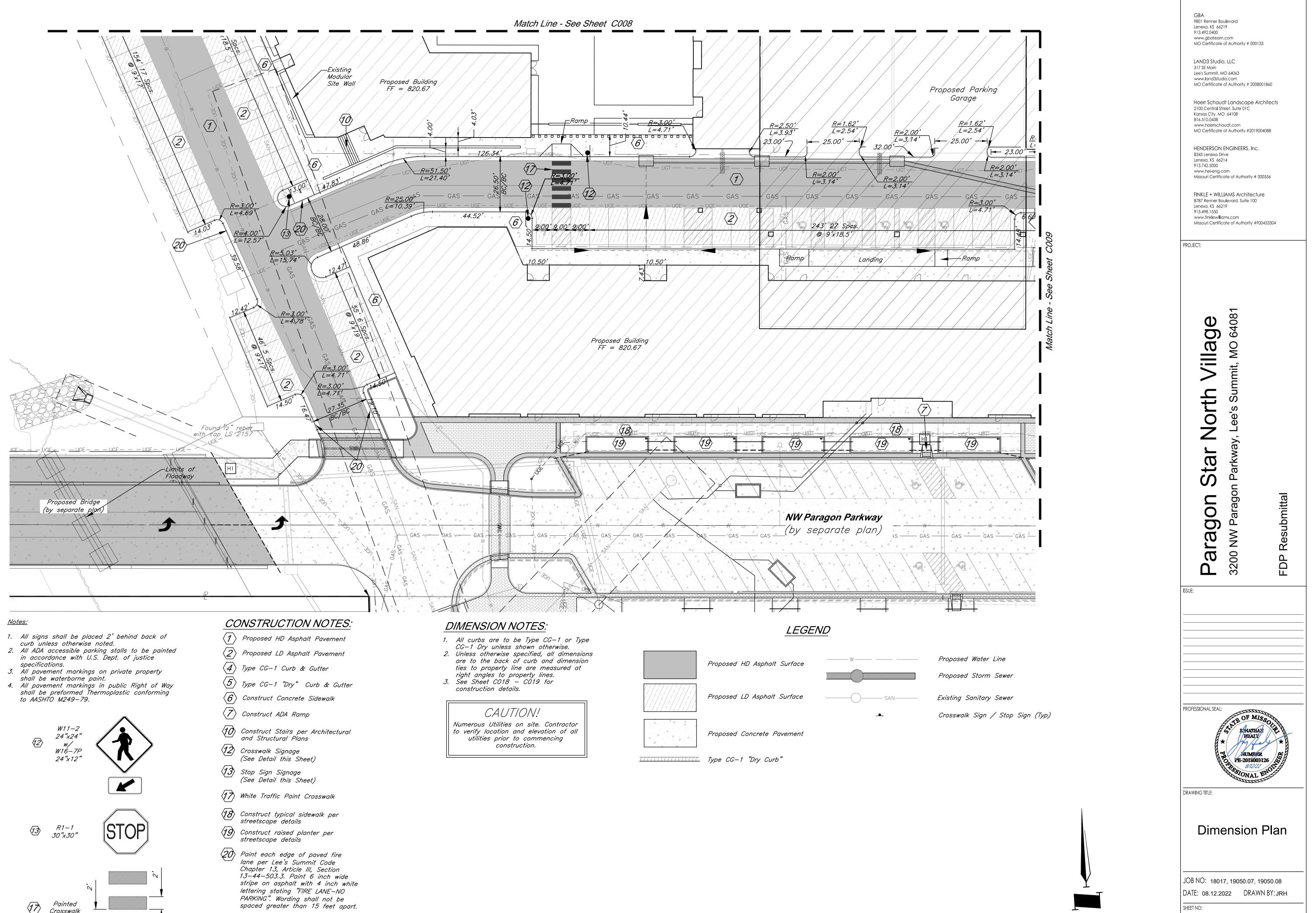


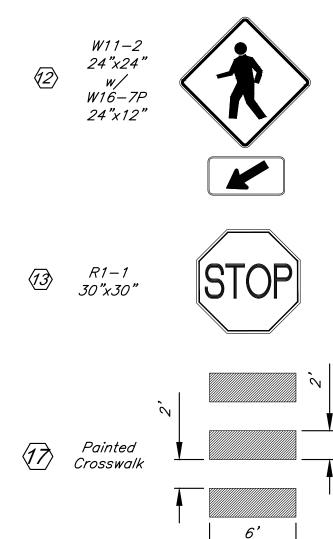


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losure	GBA 9801 Renner Boulevard Lenexa, KS 66219 913.492.0400 www.gbateam.com MO Certificate of Authority # 00 LAND3 Studio, LLC 317 SE Main Lee's Summit, MO 64063 www.land3studio.com MO Certificate of Authority # 20 Hoerr Schaudt Landscape 2100 Central Street, Suite 01C Kansas City, MO 64108 816.510.0438 www.hoerschaudt.com MO Certificate of Authority #201 HENDERSON ENGINEERS, In 8345 Lenexa Drive Lenexa, KS 66214 913.742.5000 www.hei-eng.com Missouri Certificate of Authority : FINKLE + WILLIAMS Architect 8787 Renner Boulevard, Suite 10 Lenexa, KS 66219 913.498.1550 www.finklewilliams.com Missouri Certificate of Authority :	08001860 Architects 19004088 c. # 000556 :ture 0
ace ace	Paragon Star North Village 3200 NW Paragon Parkway, Lee's Summit, MO 64081	FDP Resubmittal
vement	PROFESSIONAL SEAL: PROFESSIONAL SEAL: PROFES	n Plan
	DATE: 08.12.2022 DRA	.wn by: jrh

C009





SCALE : 1 INCH = 20 FEET

C010

	wye, Sta=14+18.41, [=809.26. [@ End of wye=809.93. Install 67 LF 6" Dia. SDR26 PVC Pipe @ 7.07% to S3.
<u>S2</u>	Install Cleanout
<u>S</u> 3	Connect to 6" building stub, [=814.67. See MEP plan for continuation.
<u>S</u> 4	Connect 6" Service Line to Sanitary Sewer Line A with cut—in wye, Sta=14+8.20, [=809.17. [@ End of Tee=809.84. Install 200 LF 6" Dia. SDR26 PVC Pipe @ 1% to S5.
<u>(</u> 55)	Install wye connection, $f_{\rm c} = 811.84$.

S1) Connect 6" Service Line to Sanitary Sewer Line A with cut-in

Sanitary Sewer Construction Notes

- Install 21 LF 6" Dia. SDR26 PVC Pipe @ 1% to S6. Install 77 LF 6" Dia. SDR26 PVC Pipe @ 1% to S7. (S6) Connect to 6" building stub, f = 812.05. See MEP plan for
- continuation. (S7) Install wye connection, $f_{E} = 812.61$. Install 19 LF 6" Dia. SDR26 PVC Pipe @ 1% to S8.
- Install 109 LF 6" Dia. SDR26 PVC Pipe @ 1% to S9. (S8) Connect to 6" building stub, f = 812.80. See MEP plan for continuation.
- (S9) Connect to 6" building stub, f = 813.70. See MEP plan for continuation.
- (\$10) 45° Bend
- §11) 22.5° Bend
- (S12) Sanitary line crosses under storm sewer. Construct 10 LF Reinforced Concrete Encasement, centered on crossing. (S13) Sanitary line crosses under storm sewer. Construct 30 LF Reinforced Concrete Encasement, centered on crossing.

Connect 6" Service Line to (\$14) existing Sanitary Sewer Service Stub, [=811.41±. Install 6 LF 6" dia. SDR26 PVC north to building stub, F =813.67.

___ Proposed Bridge

— (by separate plan)

See Sheet CO12 for water-

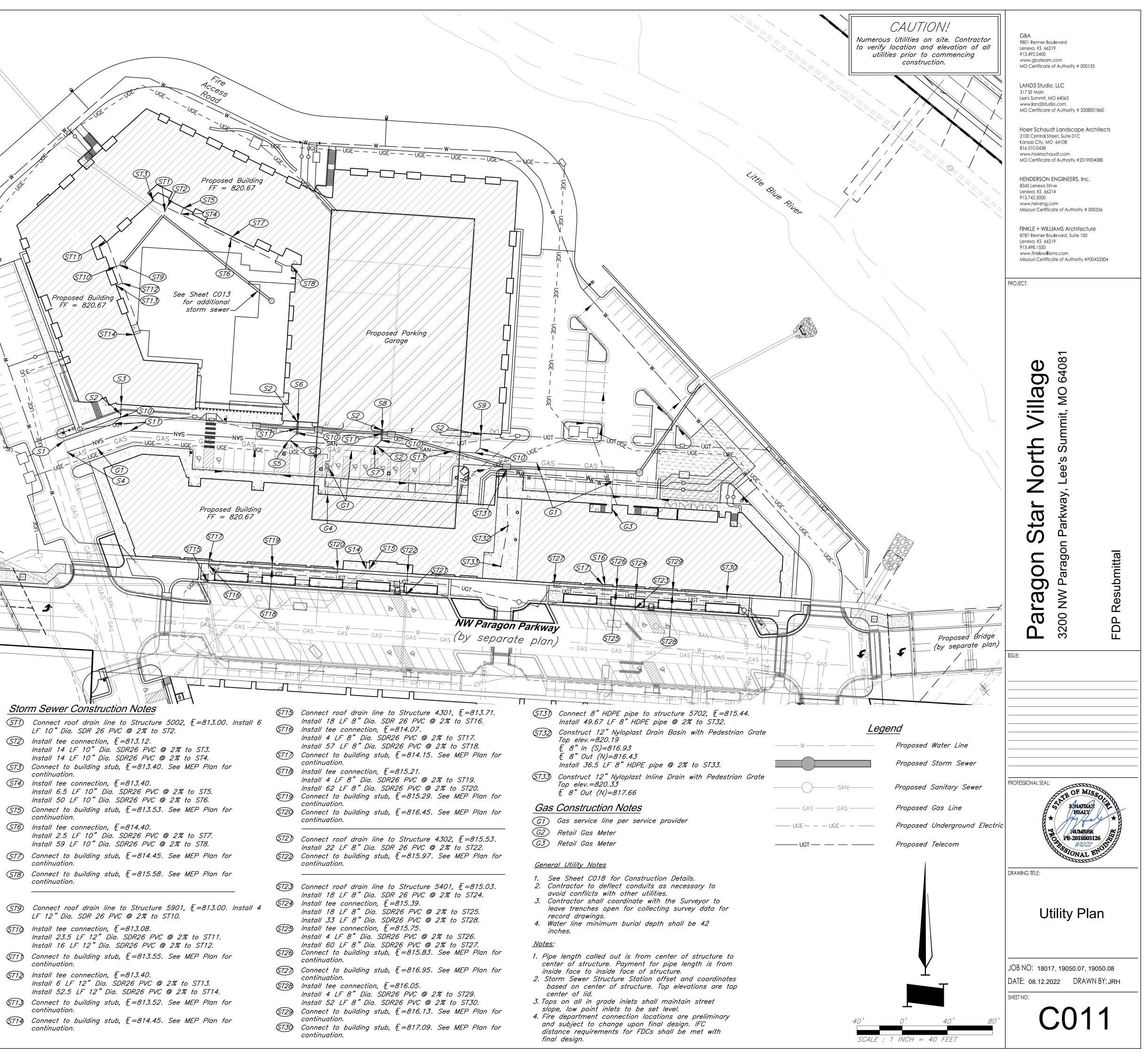
line construction

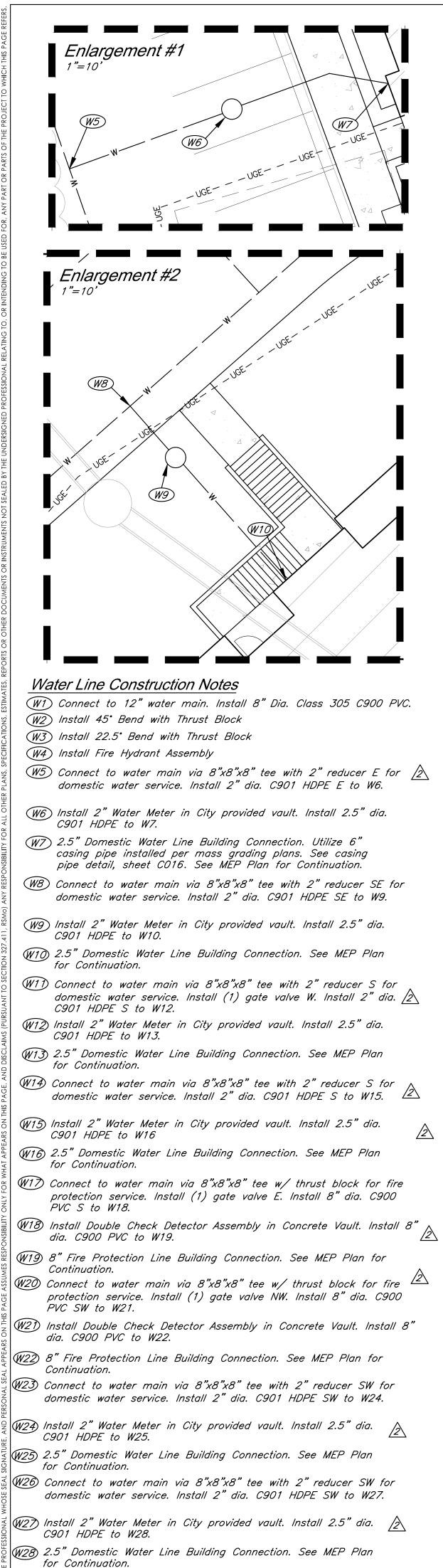
- (\$15) Connect 4" Service Line to existing Sanitary Sewer Service Stub, *E* =811.41±. Install 6 LF 4" dia. SDR26 PVC north to building stub (grease line), [=813.67.
- (\$16) Connect 6" Service Line to existing Sanitary Sewer Service Stub, 1 =813.20±.
- (S17) Connect 4" Service Line to existing Sanitary Sewer Service Stub (grease line), *[*[*=813.20±*

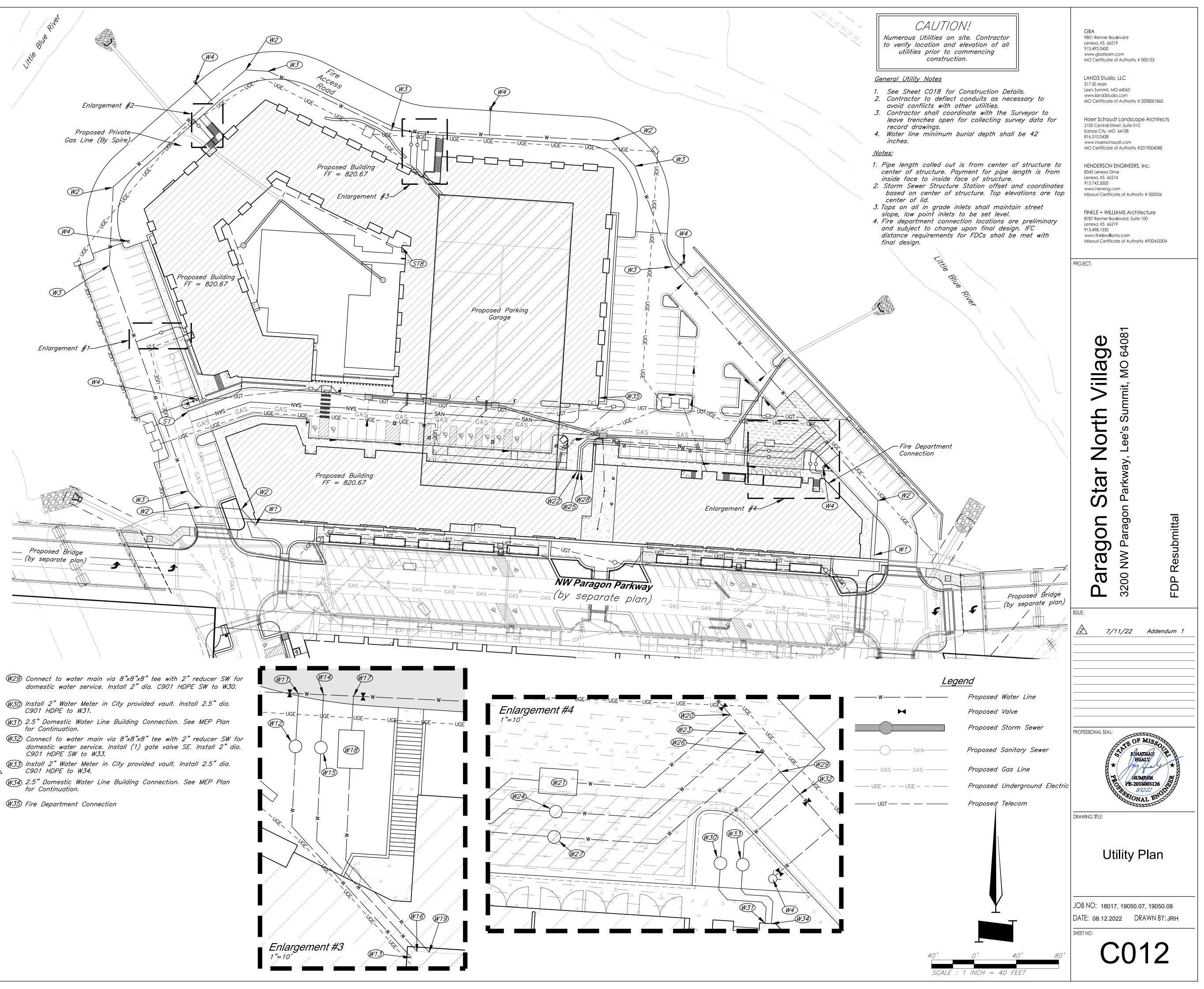
Storm Sewer Construction Notes (ST2) Install tee connection, $f_{\rm c} = 813.12$. continuation. (ST4) Install tee connection, $f_{2} = 813.40$. continuation. (ST6) Install tee connection, [=814.40. continuation. continuation. (T10) Install tee connection, $f_{\rm c} = 813.08$. continuation. (T12) Install tee connection, $f_{2} = 813.40$. continuation.

roposed Bu

continuation.

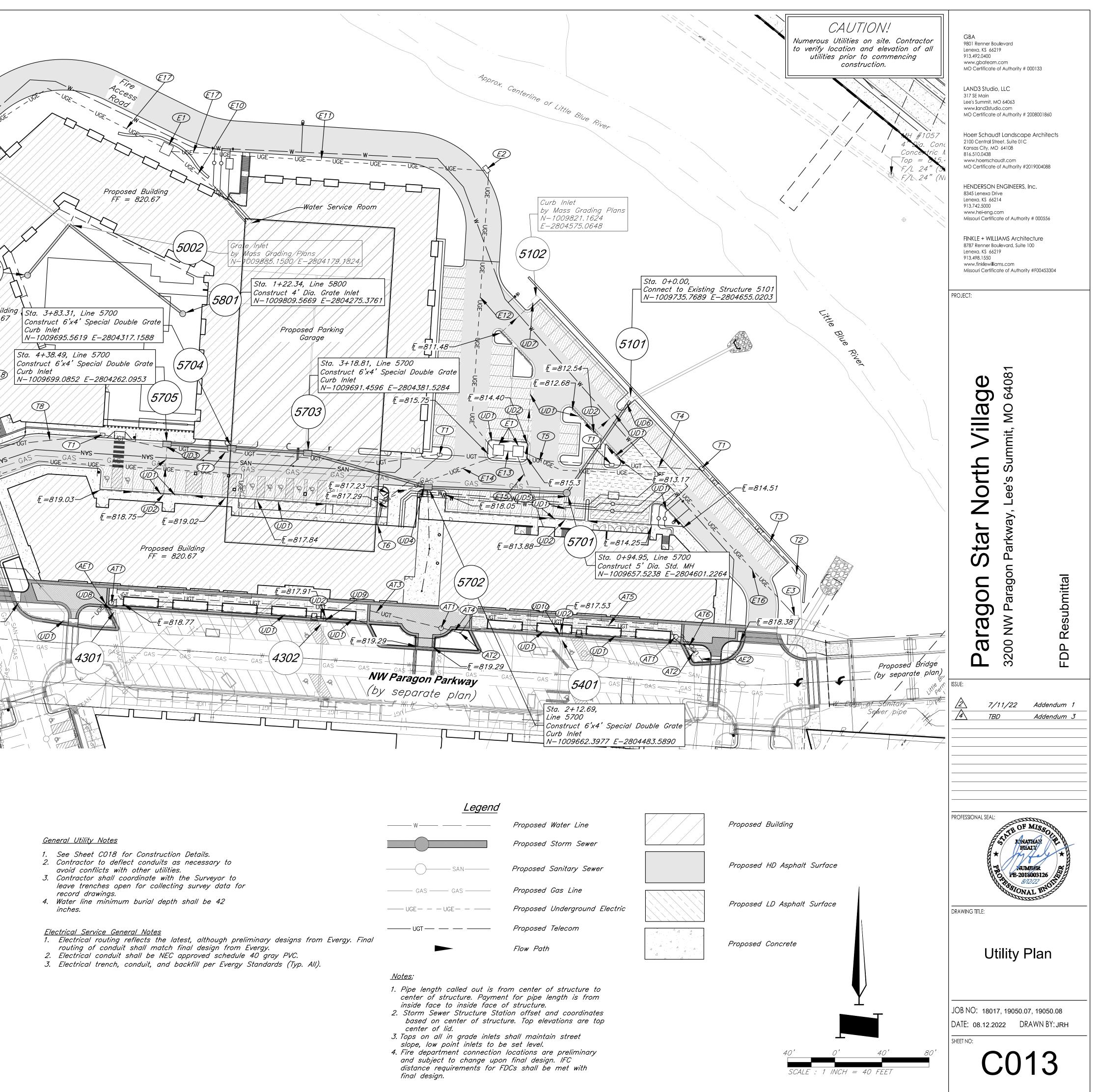


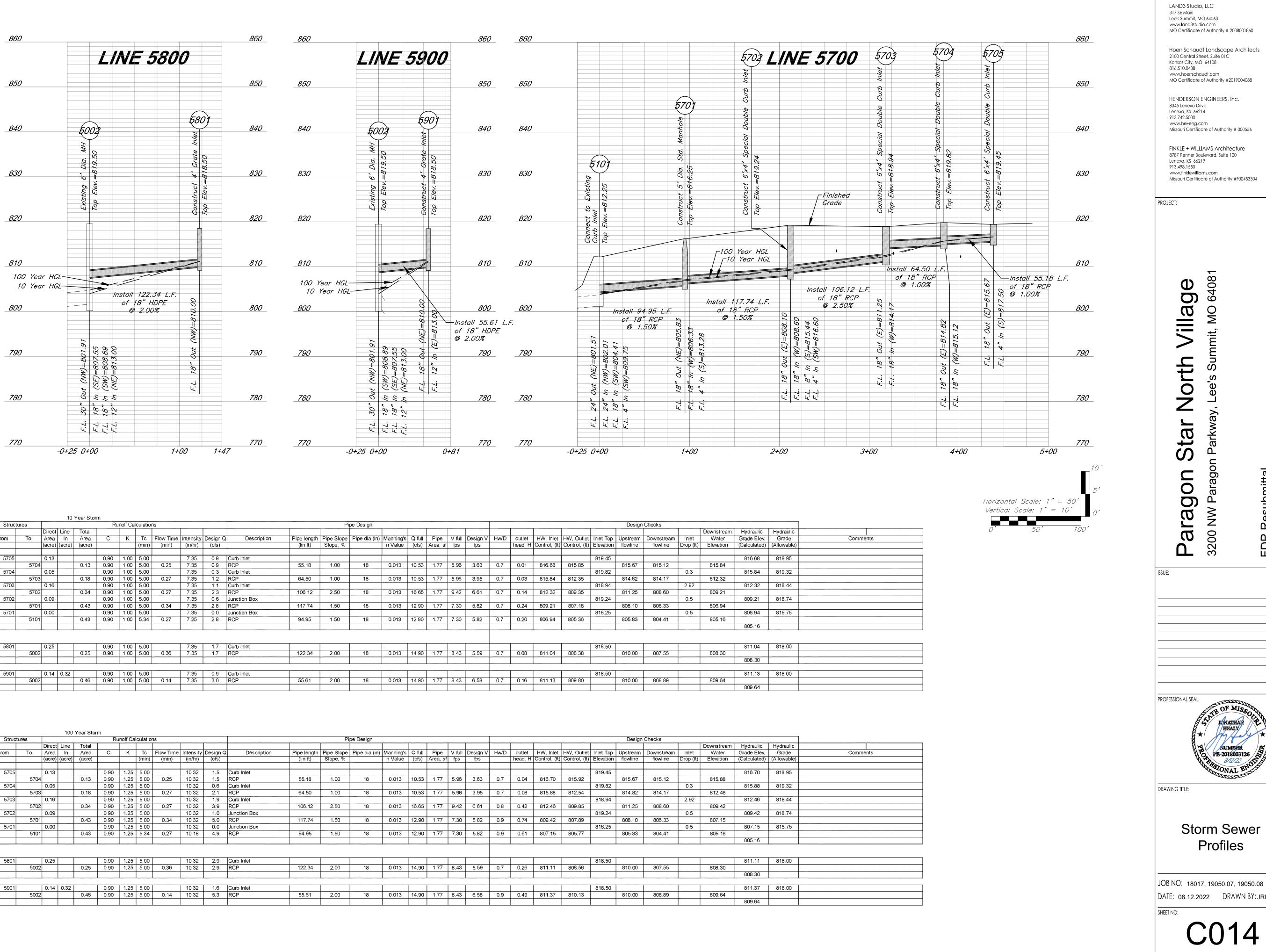




W35) Fire Department Connection

Flort	ical Service Construction Notes	
$\overline{\bigcirc}$	nstall 9'x9' Building Transformer Pad per Evergy Standards	
\frown	nstall 200 Amp Sectionalizer Furnished by Evergy per Detail 760.1–5	3
$\overline{}$	Sonnect to existing 200 Amp Sectionalizer constructed per Paragon	
F	Parkway Plans	Q ¹ ² ⁶
	nstall 64 LF 4" Dia. Sch. 40 PVC Conduit.	ittle Bue River
e	nstall 300 LF (8) 3" Dia. Sch. 40 PVC Conduit to building vlectrical room. Continue per MEP Plans.	
	nstall 9 LF 4" Dia. Sch. 40 PVC Conduit.	·
	nstall 122 LF (8) 3" Dia. Sch. 40 PVC Conduit to building Nectrical room. Continue per MEP Plans.	
	nstall 168 LF 4" Dia. Sch. 40 PVC Conduit.	- Hick
\frown	nstall 356 LF 4" Dia. Sch. 40 PVC Conduit.	
(\sim)	See MEP Plan for electrical service conduit.	
EID II	nstall 266 LF 4" Dia. Sch. 40 PVC Conduit.	E9
	nstall 242 LF 4" Dia. Sch. 40 PVC Conduit.	
	nstall 8 LF 4" Dia. Sch. 40 PVC Conduit.	Proposed Private
	See MEP Plan for electrical service conduit.	Gas Line (By Spire)
(E15) S	See MEP Plan for electrical service conduit.)	554
Ä	nstall 287 LF 4" Dia. Sch. 40 PVC Conduit.	
	Connect to existing 4" Dia. PVC Conduit installed per the Aultifamily Mass Grading Plans	sé H
(E18) (Aultifamily Mass Grading Plans. Connect to existing 3" Dia. PVC Conduit installed per the	Sta. 0+55.61, Line 5900
	Aultifamily Mass Grading Plans.	Construct 4' Dia. Grate Inlet N-1009842.2438 E-2804143.8049
	n ity Zone Electrical Construction Notes nstall 35 LF 1" HDPE Conduit from existing connection to Planter B	Box E2
	nstall 39 LF 1" HDPE Conduit from existing connection to Planter B	
Telec	om Construction Notes	FF =
	Install Telecom Utility Pull Box.	
\leq	Connect to existing Telecom Pull Box installed per Paragon Parkway	
\bigcirc	Plans	
	Install 119 LF (3) 5" HDPE Conduit. Two conduits shall have (4) 2 fabric innerducts.	
<u>(74)</u>	Install 108 LF (3) 5" HDPE Conduit. Two	A DEET THE
-	conduits shall have (4) 2" fabric innerducts. Install 109 LF (3) 5" HDPE Conduit. Two	EB y
\smile	conduits shall have (4) 2" fabric innerducts.	A IT Room
(76)	Install 82 LF (2) 5" HDPE Conduit to building mail room.	
	Two conduits shall have (4) 2" fabric innerducts. Install 285 LF (3) 5" HDPE Conduit. Two conduits 🔗	
	shall have (4) 2" fabric innerducts.	3
	Install 98 LF (3) 5" HDPE Conduit. Two	
	conduits shall have (4) 2" fabric innerducts.	F_1 T_1
\sim	Install 98 LF (3) 5" HDPE Conduit to IT Room. Two conduits shall have (4) 2" fabric innerducts.	ET UGE-
Amen	nity Zone Telecom Construction Notes	(E6)
	Install Digital Display with Power/Data	
\sim	Connections, Unswitched Hot Power	
\simeq	Install Telecom Utility 12"x12" Quazite Box	
	Install 281 LF 2" PVC Conduit	
	Install 15 LF 2" PVC Conduit	
$\overline{\frown}$	Install 215 LF 2" PVC Conduit	
(AT6)	Install 19 LF 2" PVC Conduit	
Under	rdrain Construction Notes	
	nstall 4" Dia. Perforated HDPE @ 0.5% minimum slope.	Proposed Bridge
$\tilde{}$	nstall 4" Dia. HDPE Tee	$(by \ separate \ plan)$
	Connect to Storm Structure 5705, [=817.50.	
\sim	Connect to Storm Structure 5702, $f_{\rm c} = 816.60$.	
$\overset{\smile}{\sim}$	Connect to Storm Structure 5702, [=818.80. Connect to Storm Structure 5701, [=813.28.	
	Sonnect to Storm Structure 5701, $f_{L} = 809.75$.	
Ä	Connect to Storm Structure 5102, $f_{\rm c}$ =808.75.	
$\widetilde{}$	Connect to Storm Structure 4301, $f_{\rm c} = 817.70$.	
\simeq	Connect to Storm Structure 4301, [=817.70. Connect to Storm Structure 4302, [=817.80.	
\simeq	Connect to Storm Structure 4302, [=817.80. Connect to Storm Structure 5401, [=817.50.	
	$\int \partial m e \mathcal{O}(\mathcal{O}(\mathcal{O}(\mathcal{O}(\mathcal{O}(\mathcal{O}(\mathcal{O}(\mathcal{O}($	





	Structu	ures	Runoff Calculations									Pipe Design													Design Checks											
			Direct Line	Total																								Downstream	Hydraulic	Hydraulic						
	From	То	Area In	Area	С	K	Тс	Flow Time	Intensit	Design C	Description		n Pipe Slope	Pipe dia (in) Manning's		Pipe		Design V	Hw/D	outlet	HW, Inlet	HW, Outlet	Inlet Top	Upstream	Downstream	Inlet	Water	Grade Elev.	Grade						
			(acre) (acre	e) (acre)			(min)	(min)	(in/hr)	(cfs)		(lin ft)	Slope, %		n Value	(cfs)	Area, sf	fps	fps		head, H	Control, (ft)) Control, (ft)	Elevation	flowline	flowline	Drop (ft)	Elevation	(Calculated)	(Allowabl						
+	5705		0.13		0.90	1.00	5.00		7.35	0.9	Curb Inlet													819.45					816.68	818.95						
		5704		0.13	0.90	1.00	5.00	0.25	7.35	0.9	RCP	55.18	1.00	18	0.013	10.53	1.77	5.96	3.63	0.7	0.01	816.68	815.85		815.67	815.12		815.84								
Line 5700	5704		0.05		0.90	1.00	5.00		7.35	0.3	Curb Inlet													819.82			0.3		815.84	819.32						
		5703		0.18	0.90	1.00	5.00	0.27	7.35	1.2	RCP	64.50	1.00	18	0.013	10.53	1.77	5.96	3.95	0.7	0.03	815.84	812.35		814.82	814.17		812.32								
	5703		0.16		0.90	1.00	5.00		7.35	1.1	Curb Inlet													818.94			2.92		812.32	818.44						
00		5702		0.34	0.90	1.00	5.00	0.27	7.35	2.3	RCP	106.12	2.50	18	0.013	16.65	1.77	9.42	6.61	0.7	0.14	812.32	809.35		811.25	808.60		809.21								
	5702		0.09		0.90	1.00	5.00		7.35	0.6	Junction Box					1					•••••••••••••••••••••••••••••••••••••••			819.24			0.5		809.21	818.74						
		5701		0.43	0.90	1.00	5.00	0.34	7.35	2.8	RCP	117.74	1.50	18	0.013	12.90	1.77	7.30	5.82	0.7	0.24	809.21	807.18		808.10	806.33		806.94								
	5701		0.00		0.90	1.00	5.00		7.35	0.0	Junction Box													816.25			0.5		806.94	815.75						
		5101		0.43	0.90	1.00	5.34	0.27	7.25	2.8	RCP	94.95	1.50	18	0.013	12.90	1.77	7.30	5.82	0.7	0.20	806.94	805.36		805.83	804.41		805.16								
						1			1																				805.16							
	5801		0.25		0.90	1.00	5.00		7.35	1.7	Curb Inlet													818.50					811.04	818.00						
00		5002		0.25	0.90	1.00	5.00	0.36	7.35	1.7	RCP	122.34	2.00	18	0.013	14.90	1.77	8.43	5.59	0.7	0.08	811.04	808.38		810.00	807.55		808.30								
																													808.30							
1	5901		0.14 0.32)	0.90	1 00	5.00		7.35	0.9	Curb Inlet					1					I		1	818.50	1	[]		811.13	818.00						
∞⊢		5002		0.46	0.90	1.00	5.00	0.14	7.35	3.0	RCP	55.61	2.00	18	0.013	14.90	1.77	8.43	6.58	0.7	0.16	811.13	809.80	010.00	810.00	808.89		809.64	011.10	0.00						
<u> </u>		0002		0.40	0.00	1.00		0.14	1.00	0.0			2.00	10	0.010	17.00	1.11	0.70	0.00	0.1	0.10		000.00		010.00	000.00		000.04	809.64							

Structures				Runoff Calculations					Pipe Design						Design Checks																
			Direct Lin	e To	tal			T.								1	1												Downstream	Hydraulic	Hydraulic
	From	То	Area In	I A	rea	С	К	Tc	Flow Time	Intensity	Design G	Description	Pipe length	Pipe Slope	Pipe dia (in)	Manning's	Q full	Pipe	V full	Design V	Hw/D	outlet	HW, Inlet	HW, Outlet	Inlet Top	Upstream	Downstream	Inlet	Water	Grade Elev.	Grade
			(acre) (acr	re) (a	cre)		(min)	(min)	(in/hr)	(cfs)		(lin ft)	Slope, %		n Value	(cfs)	Area, sf	fps	fps		head, H	Control, (ft)	Control, (ft)	Elevation	flowline	flowline	Drop (ft)	Elevation	(Calculated)	(Allowable
	5705		0.13			0.90	1.25 5	5.00		10.32	1.5	Curb Inlet													819.45	1				816.70	818.95
		5704		0.	13	0.90	1.25 5	5.00	0.25	10.32	1.5	RCP	55.18	1.00	18	0.013	10.53	1.77	5.96	3.63	0.7	0.04	816.70	815.92		815.67	815.12		815.88		
	5704		0.05			0.90	1.25 5	5.00		10.32	0.6	Curb Inlet													819.82			0.3		815.88	819.32
		5703	5	0.	18	0.90	1.25 5	5.00	0.27	10.32	2.1	RCP	64.50	1.00	18	0.013	10.53	1.77	5.96	3.95	0.7	0.08	815.88	812.54		814.82	814.17		812.46		
-	5703		0.16			0.90	1.25 5	5.00		10.32	1.9	Curb Inlet		-			-			a					818.94			2.92		812.46	818.44
e 5700		5702	2	0.	34	0.90	1.25 5	5.00	0.27	10.32	3.9	RCP	106.12	2.50	18	0.013	16.65	1.77	9.42	6.61	0.8	0.42	812.46	809.85		811.25	808.60		809.42		
	5702		0.09			0.90	1.25 5	5.00		10.32	1.0	Junction Box													819.24			0.5		809.42	818.74
		5701		0.	43	0.90	1.25 5		0.34	10.32	5.0	RCP	117.74	1.50	18	0.013	12.90	1.77	7.30	5.82	0.9	0.74	809.42	807.89		808.10	806.33		807.15		
	5701		0.00			0.90	1.25 5	5.00		10.32	0.0	Junction Box													816.25			0.5		807.15	815.75
		5101		0.	43	0.90	1.25 5	5.34	0.27	10.18	4.9	RCP	94.95	1.50	18	0.013	12.90	1.77	7.30	5.82	0.9	0.61	807.15	805.77		805.83	804.41		805.16		
																														805.16	
			······							1	1	1	1	F	E	I	1		1 1				1	1		1					1
	5801		0.25			0.90	1.25 5			10.32	1	Curb Inlet													818.50					811.11	818.00
ə 5800		5002	2	0.	25	0.90	1.25 5	5.00	0.36	10.32	2.9	RCP	122.34	2.00	18	0.013	14.90	1.77	8.43	5.59	0.7	0.26	811.11	808.56		810.00	807.55		808.30		
																	L													808.30	<u> </u>
	5901		0.14 0.3	2	Τ	0.90	1.25	5.00		10.32	1.6	Curb Inlet		T		1	T								818.50	Τ				811.37	818.00
e 5900		5002	2	0.	46	0.90	1.25 §	5.00	0.14	10.32	5.3	RCP	55.61	2.00	18	0.013	14.90	1.77	8.43	6.58	0.9	0.49	811.37	810.13		810.00	808.89		809.64		
			1													1	1									1				809.64	1

Hoerr Schaudt Landscape Architects 2100 Central Street, Suite 01C Kansas City, MO 64108 816.510.0438 www.hoerschaudt.com MO Certificate of Authority #2019004088 HENDERSON ENGINEERS, Inc. 8345 Lenexa Drive Lenexa, KS 66214 www.hei-eng.com Missouri Certificate of Authority # 000556 FINKLE + WILLIAMS Architecture 8787 Renner Boulevard, Suite 100 Missouri Certificate of Authority #F00453304

GBA

9801 Renner Boulevard Lenexa, KS 66219 913.492.0400

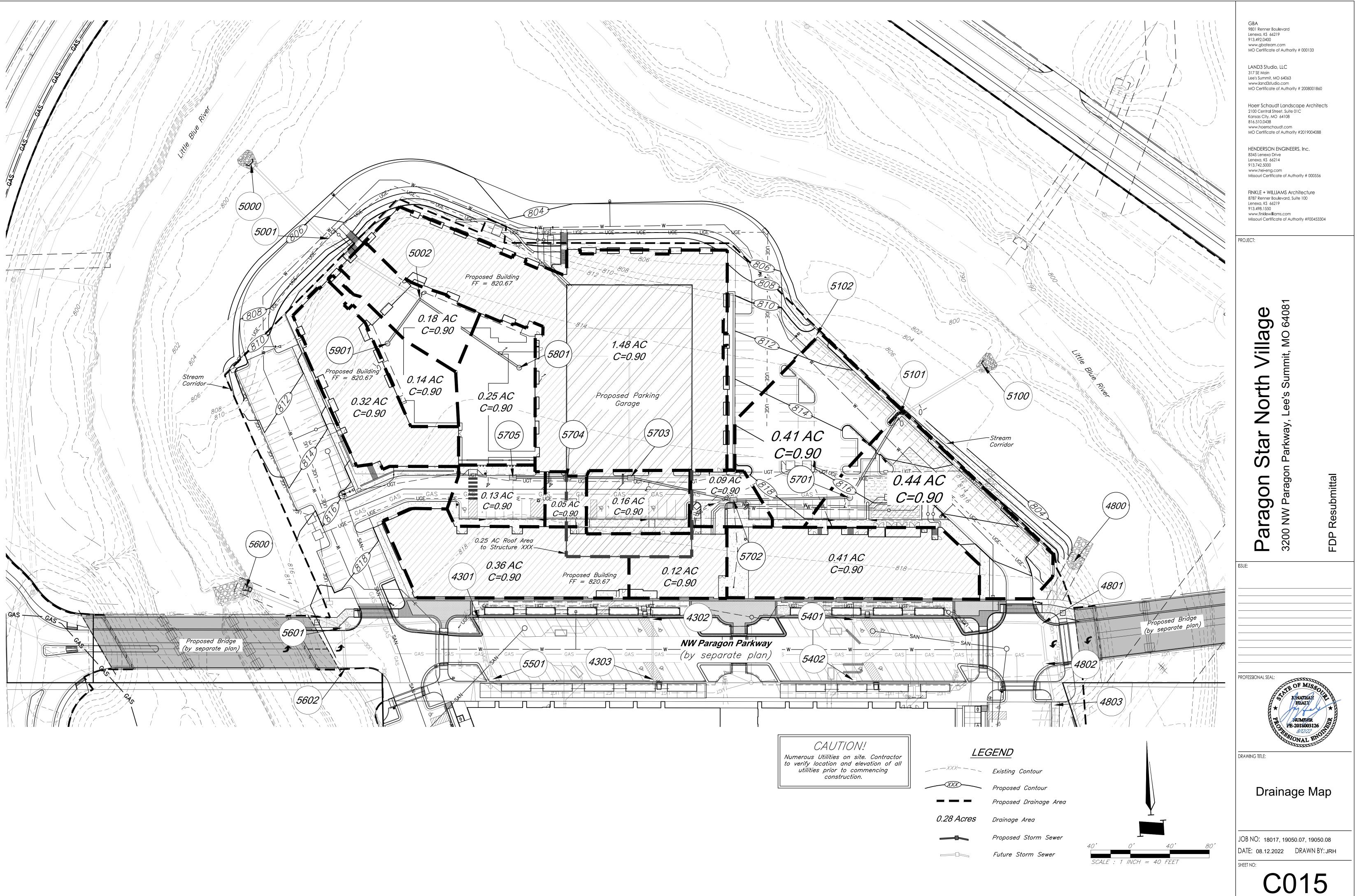
www.gbateam.com MO Certificate of Authority # 000133

> FDP Resubmitta

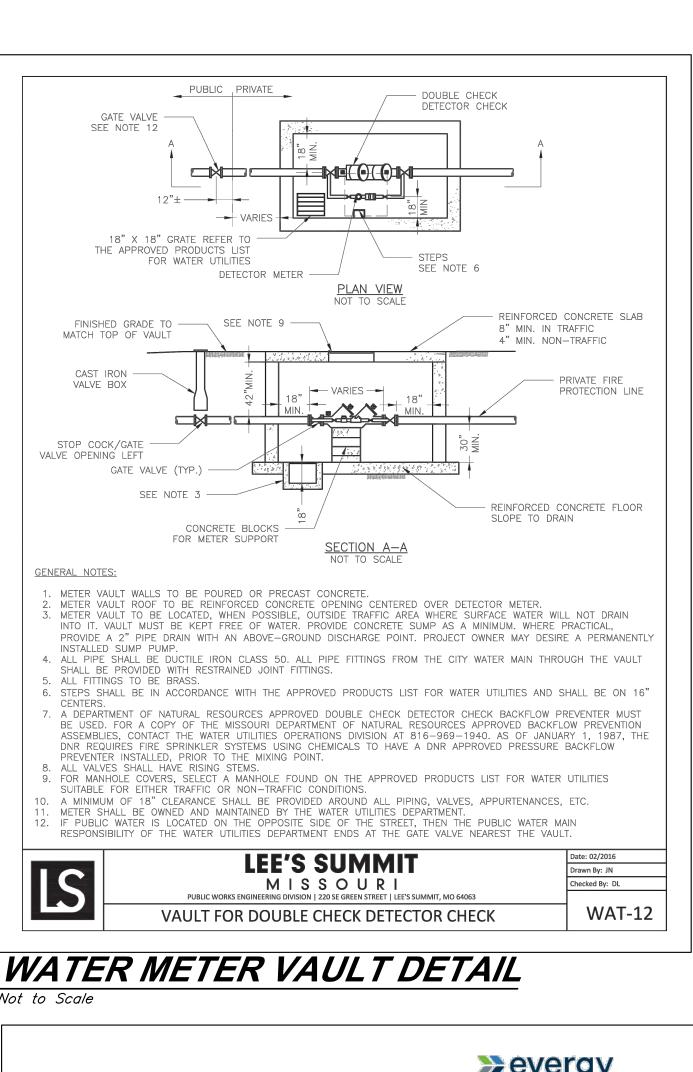
Storm Sewer Profiles

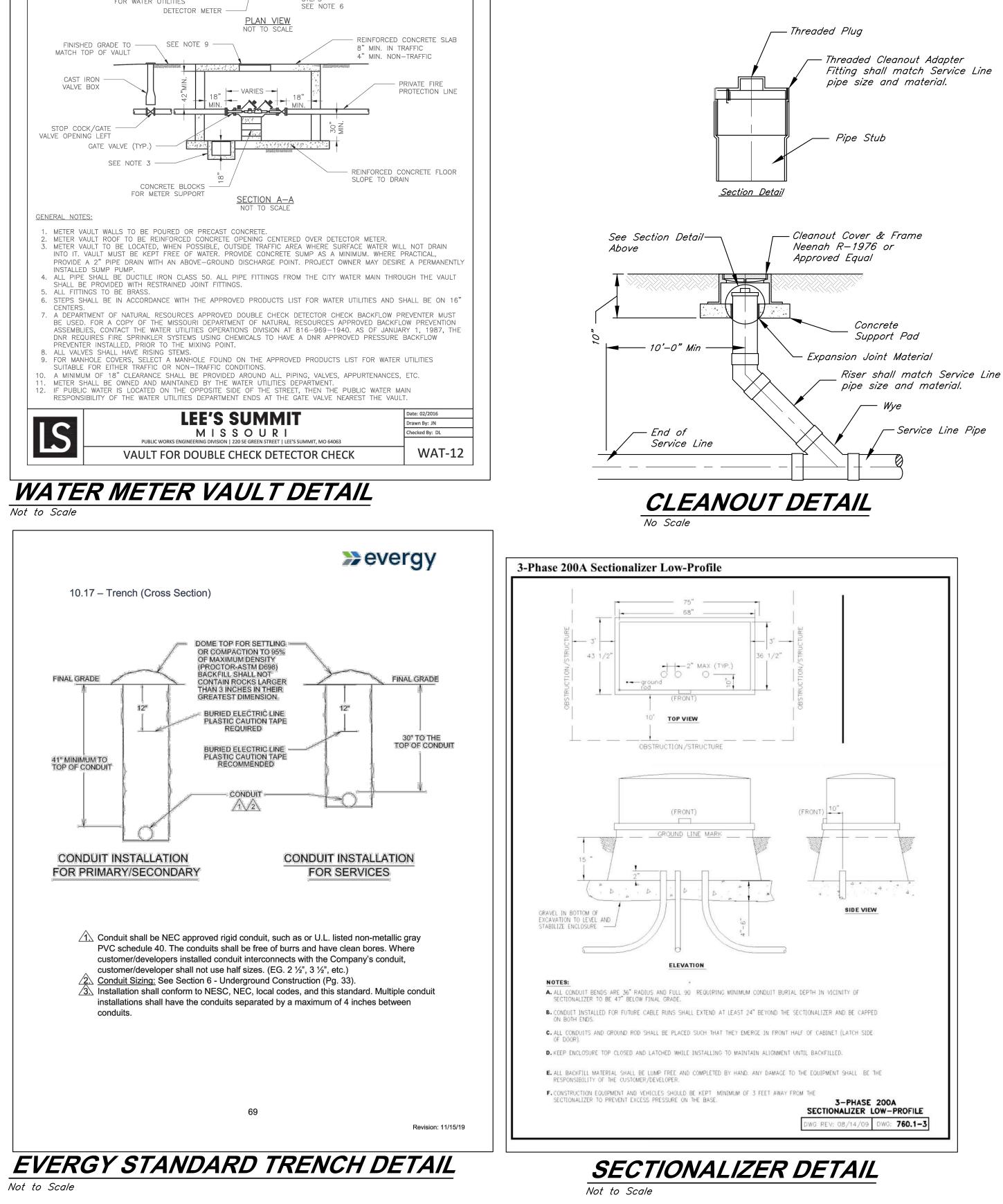
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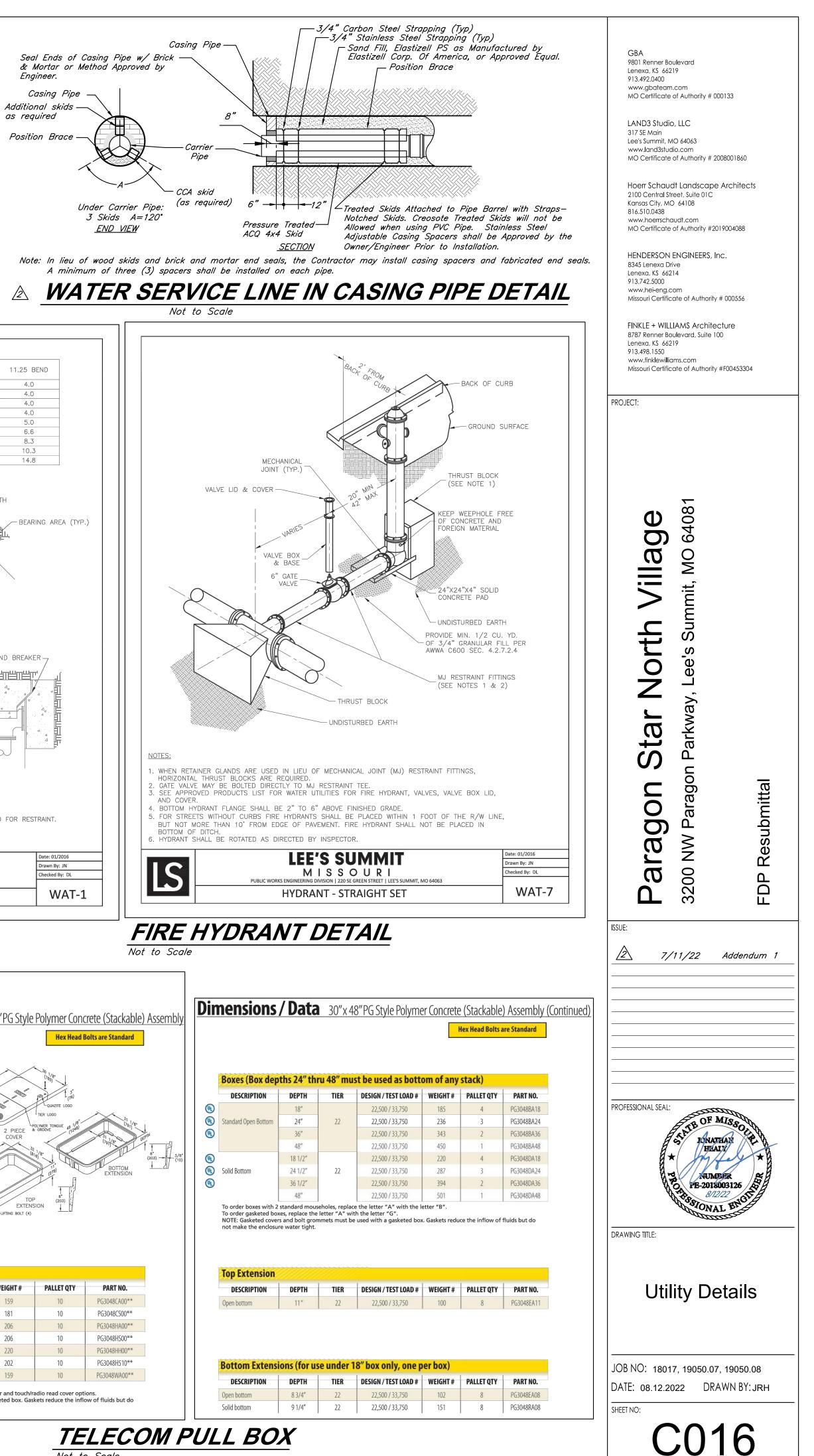


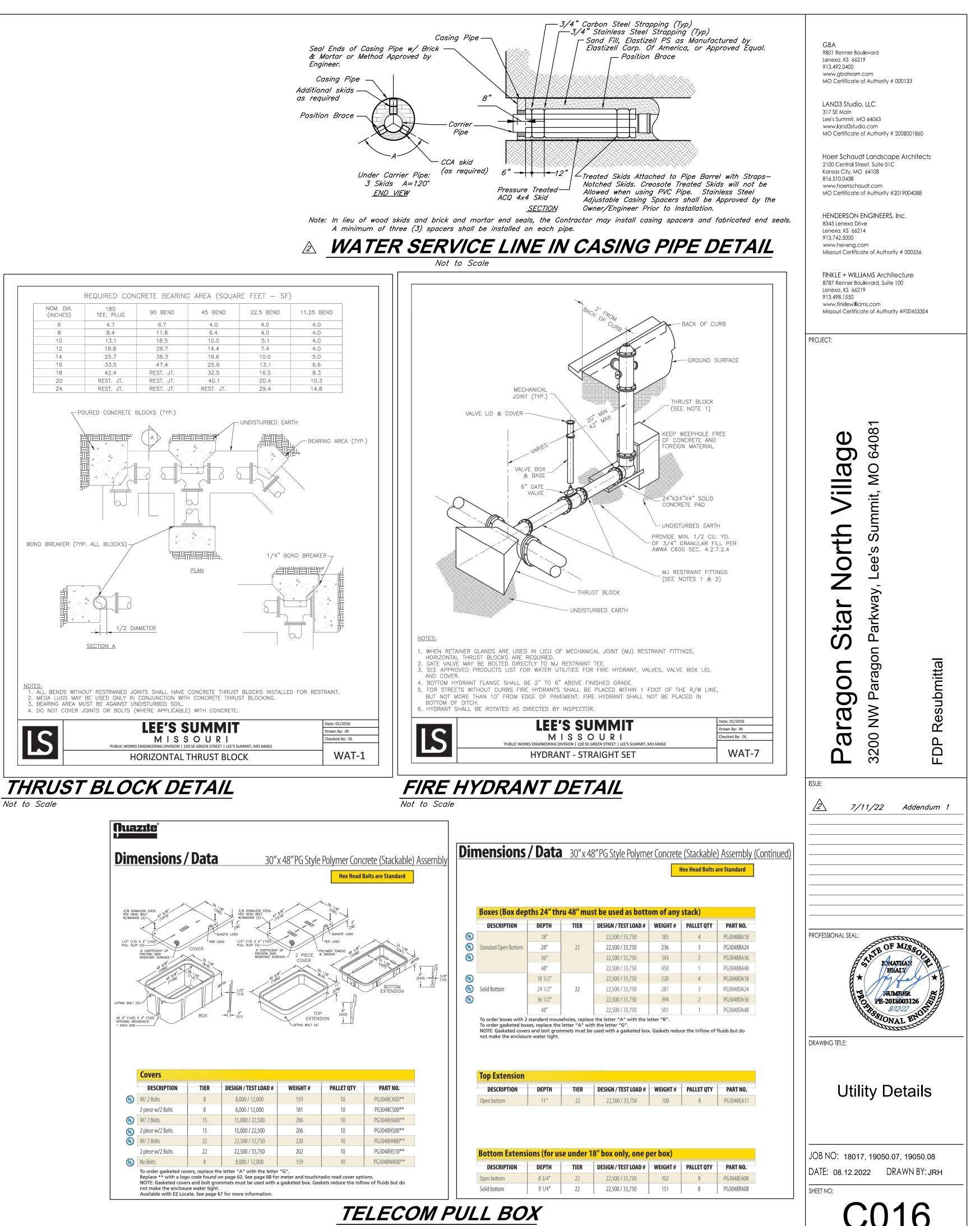




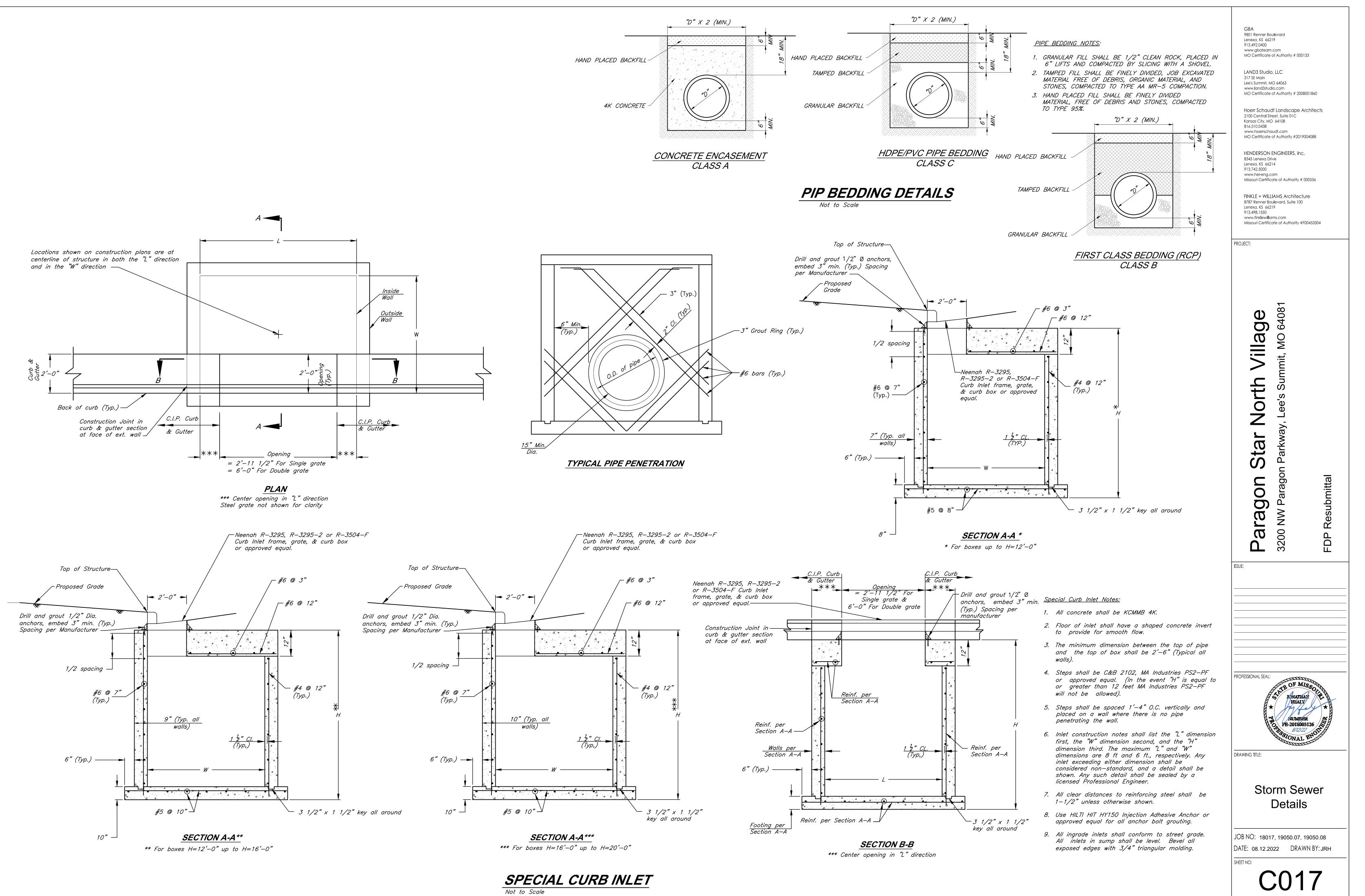


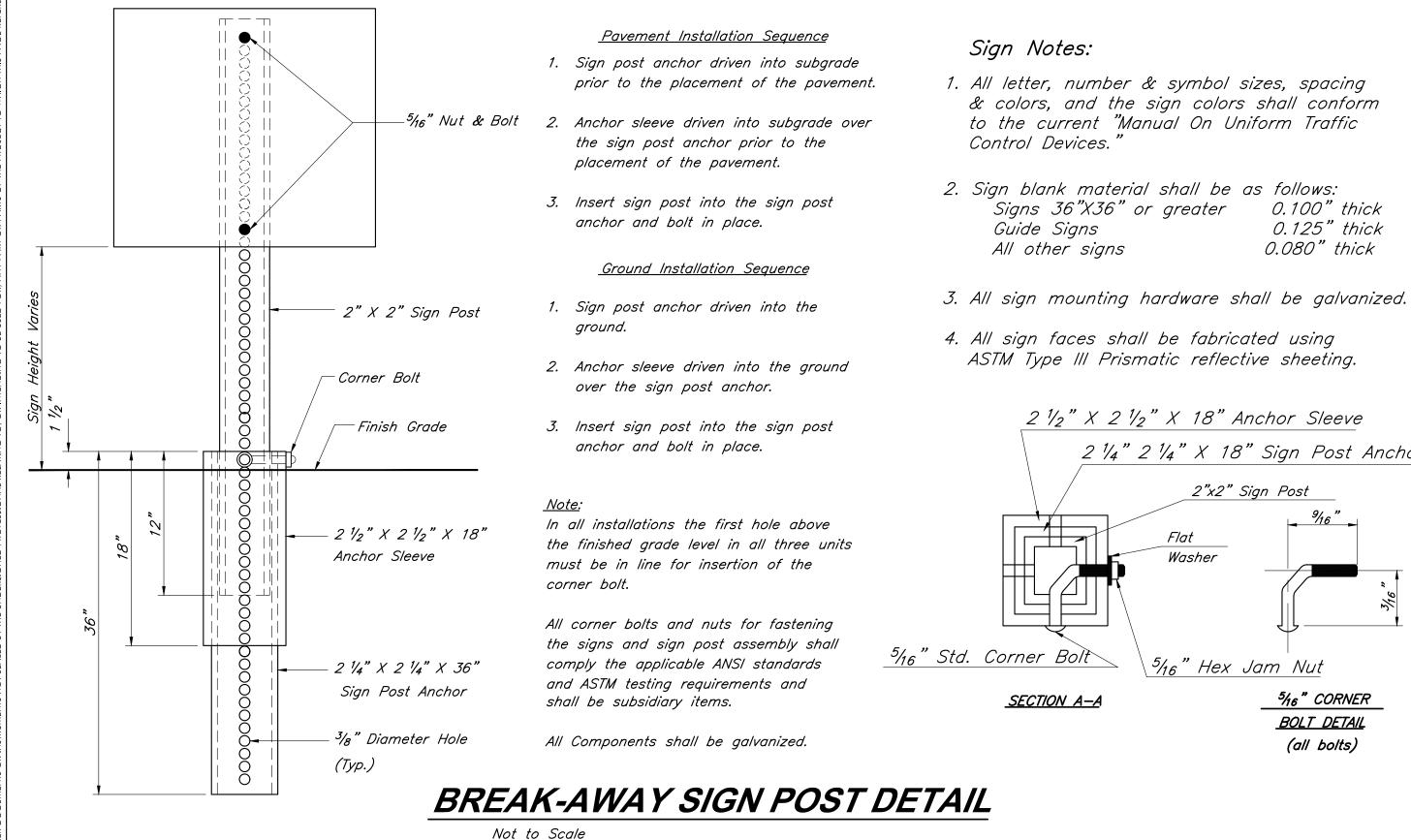




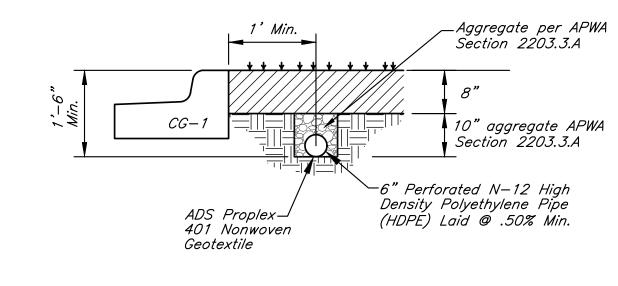


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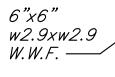




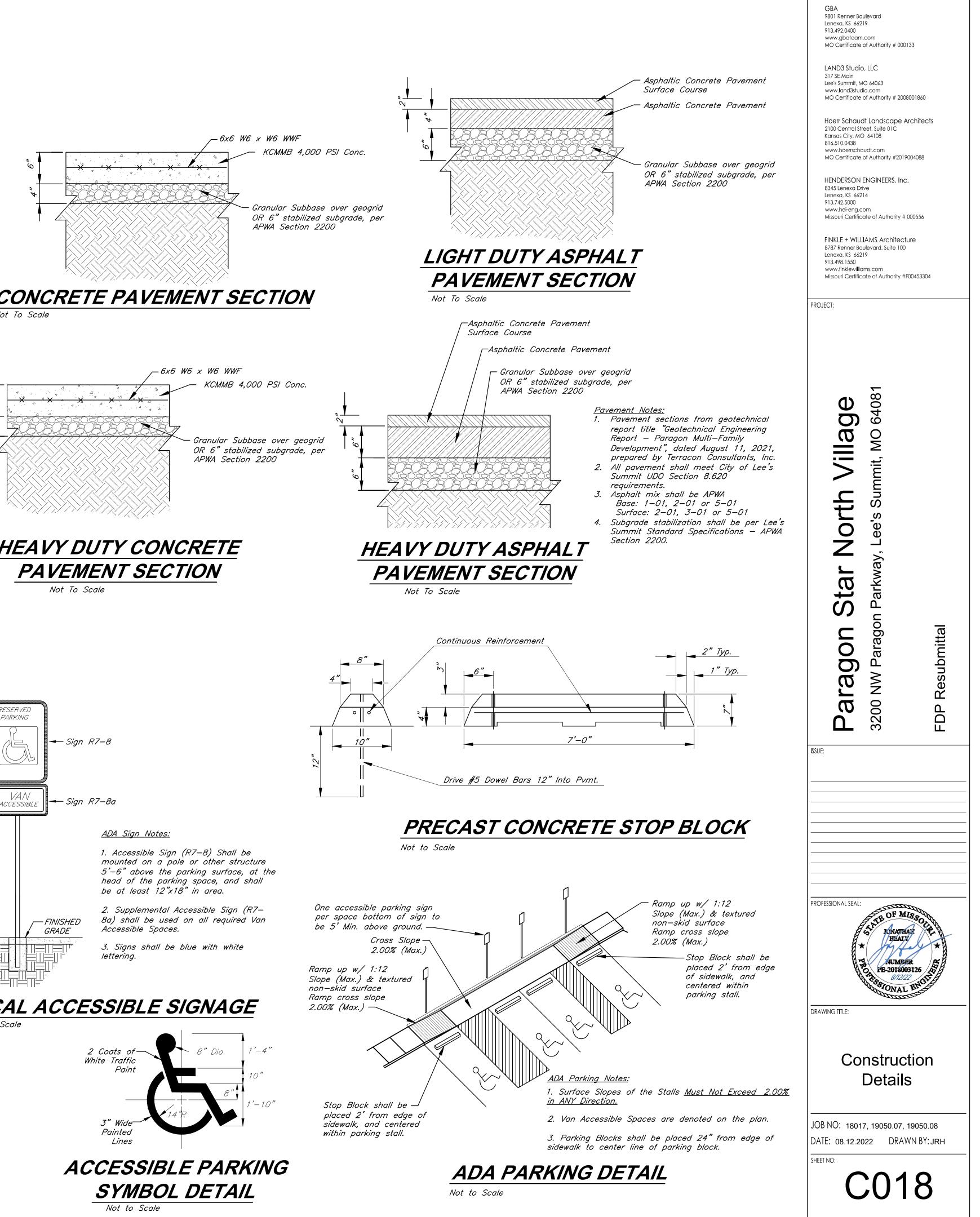


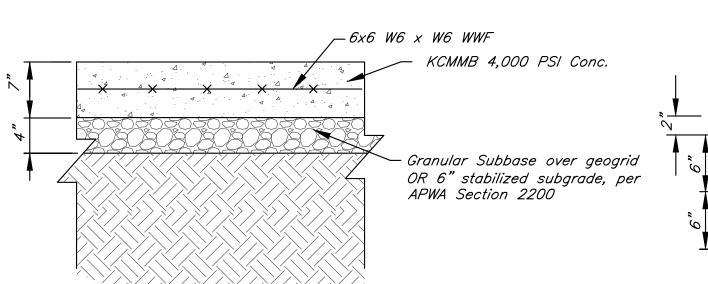




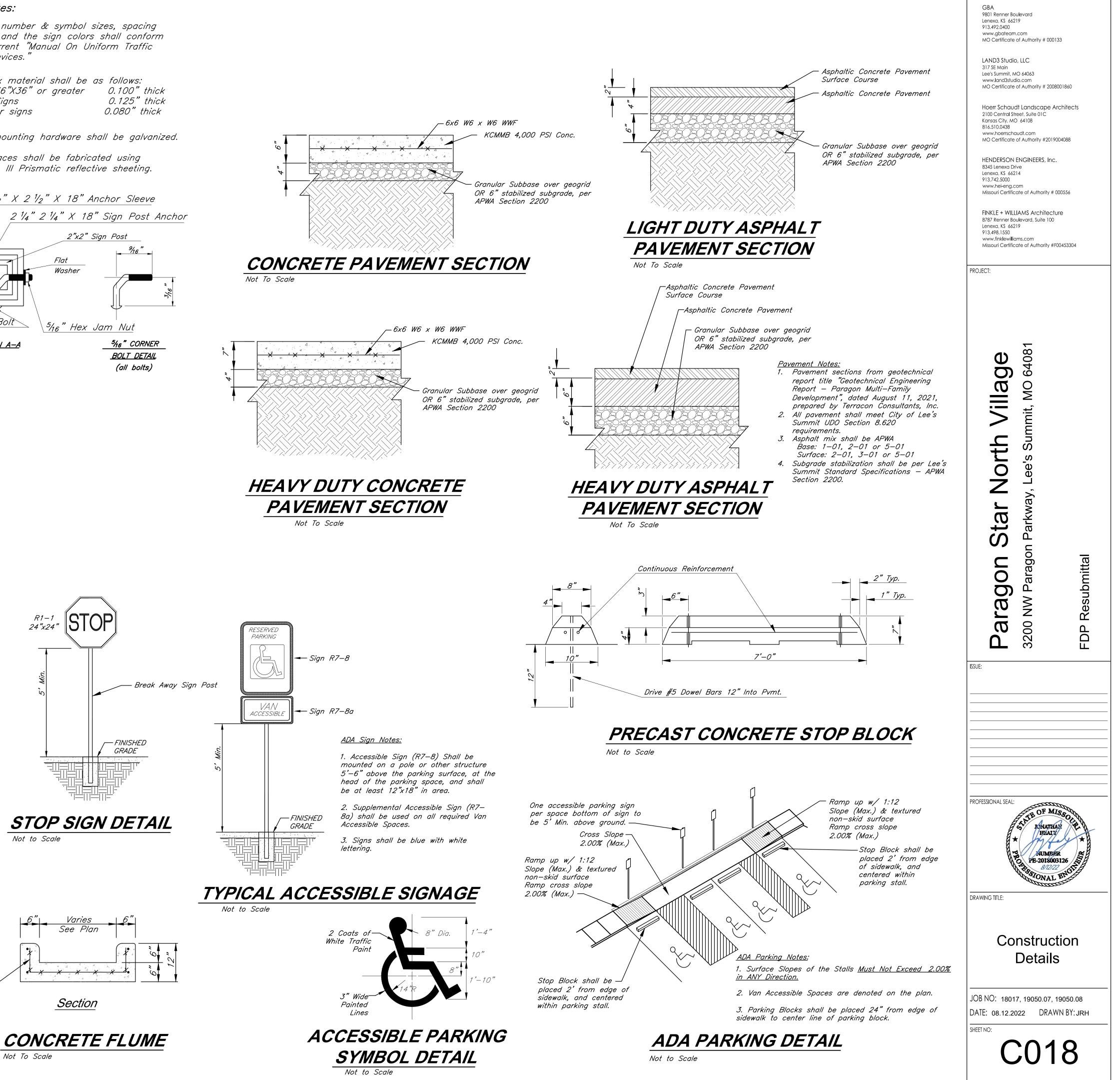


material shall be	
"X36" or greater	
<i>gns</i>	0.125" thick
signs	0.080" thick

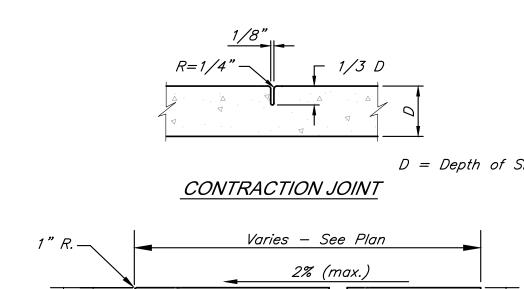


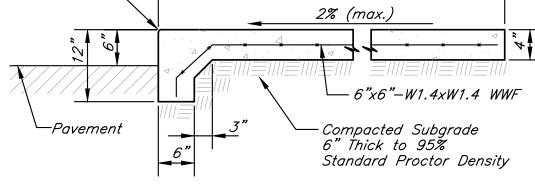


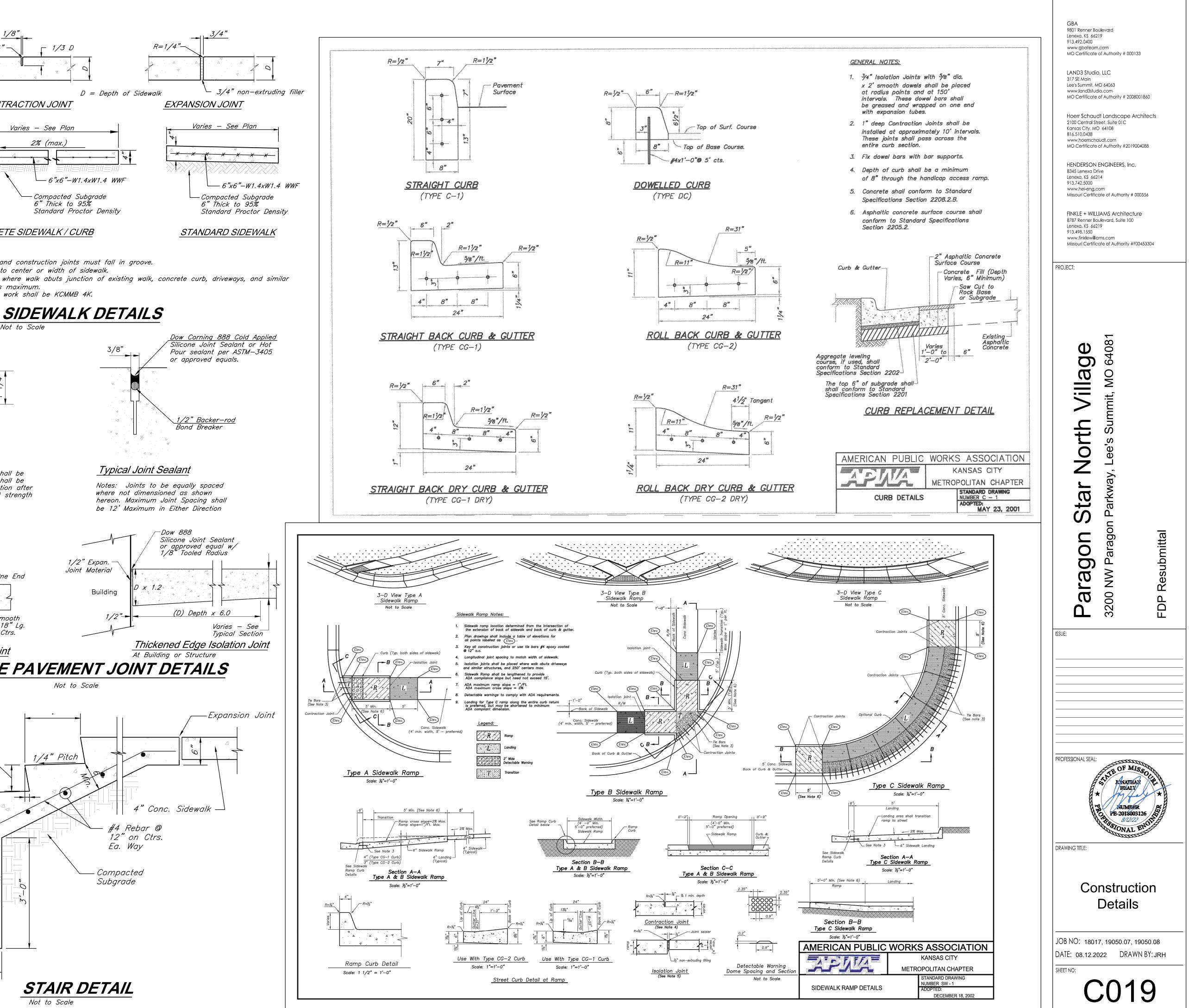




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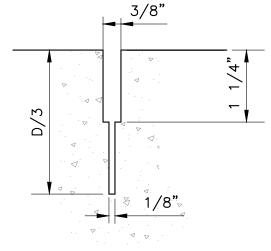


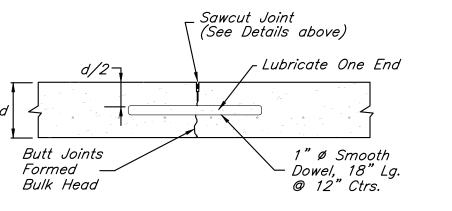


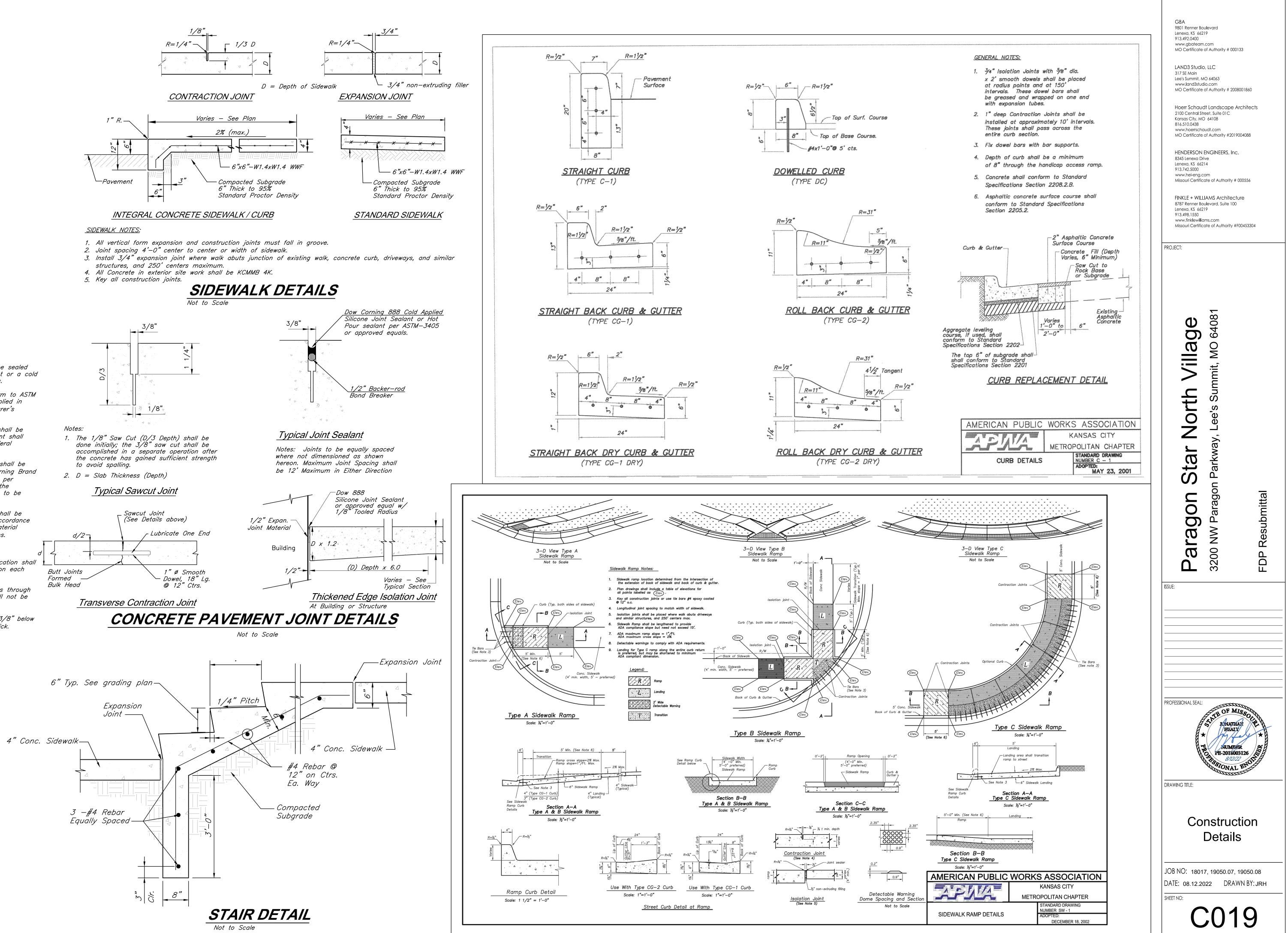


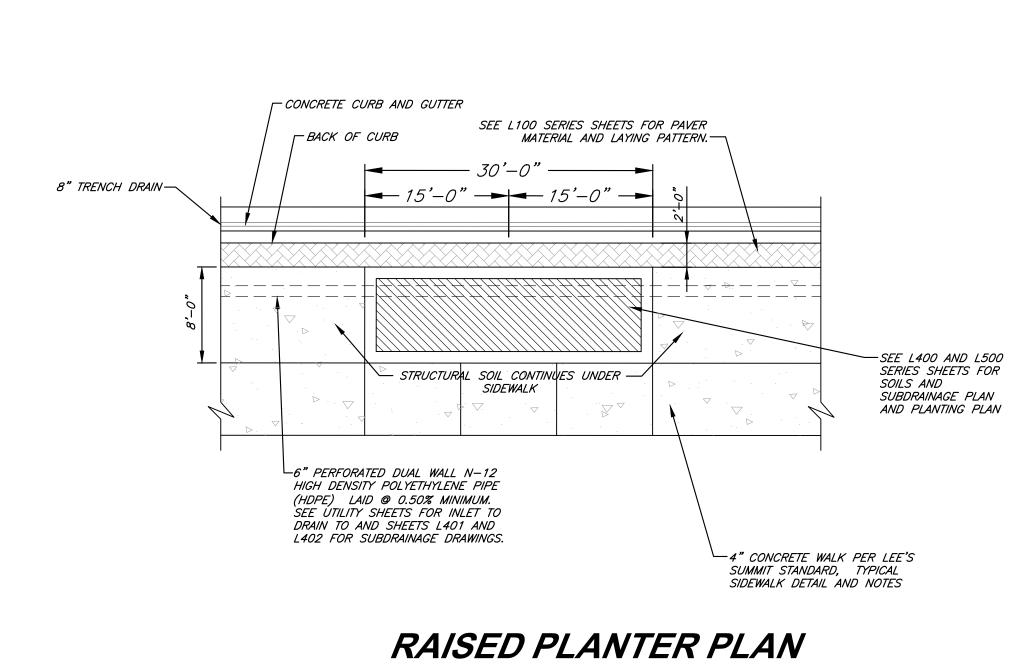
CONCRETE PAVEMENT JOINT NOTES:

- 1. All joints and saw cuts shall be sealed using either a hot-pour sealant or a cold applied sealant per these plans.
- 2. Hot-Pour Sealants shall conform to ASTM D-3405. Material shall be applied in accordance with the manufacturer's recommendations.
- 3. Silicone joint sealing material shall be cold-applied. Silicone component shall conform to requirement of Federal Specification TT-S1543.
- 4. Installation of Silicone Sealant shall be per "Installation Guide-Dow Corning Brand Silicone Pavement Sealants" or per manufactures requirements of the approved equal silicone sealant to be used.
- 5. All Silicone Sealant materials shall be pressure machine applied in accordance with the appropriate sealing material manufacturer's recommendations.
- 6. $d = Depth \ of \ Slab$
- 7. Dowel bars called out for lubrication shall be lubricated every other bar on each side of the joint.
- 8. Reinforcement is not continuous through joints. Woven Wire Fabric shall not be placed within 3" of joint.
- 9. Cold-applied Sealant shall be 3/8" below surface and minimum 1/2" Thick.

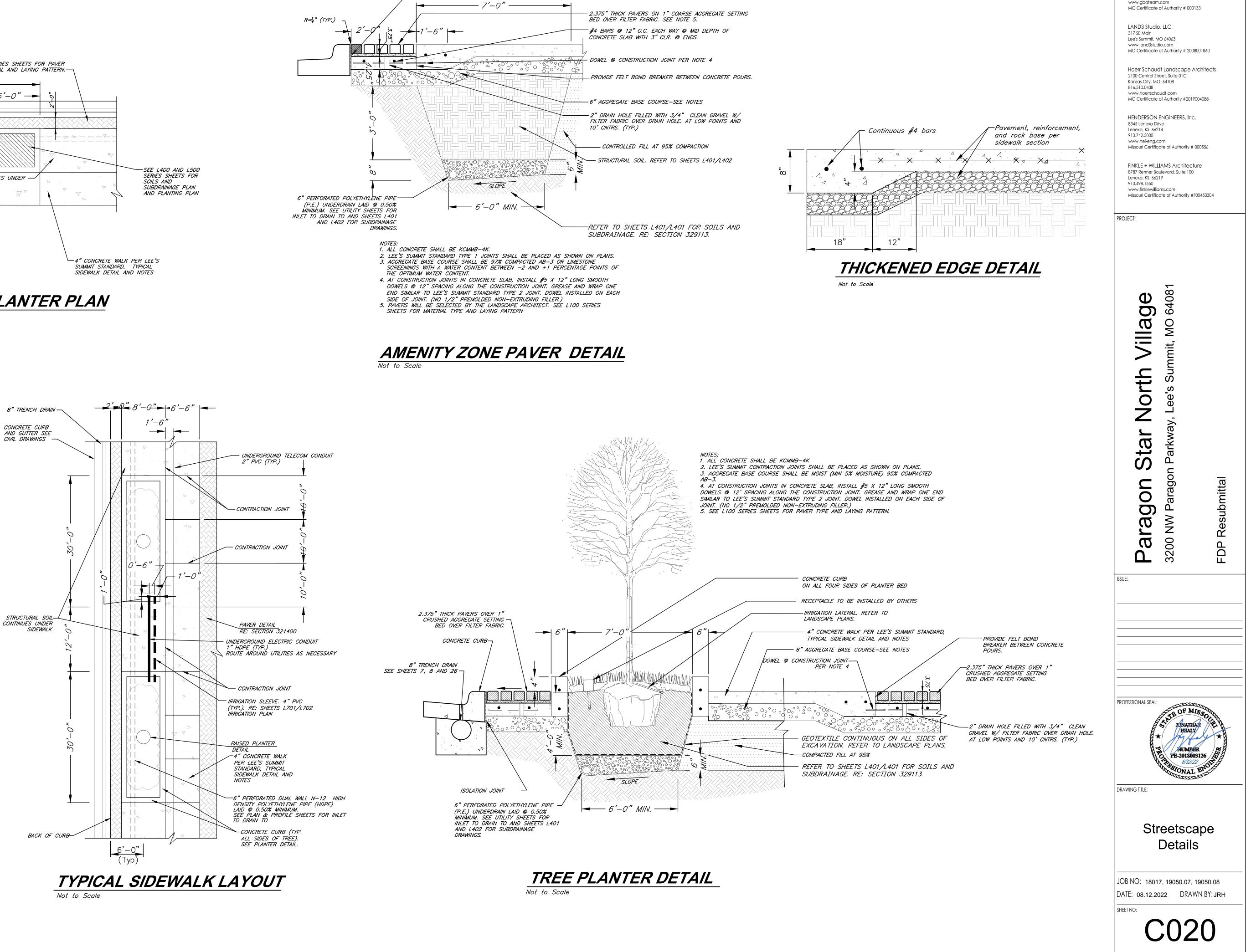


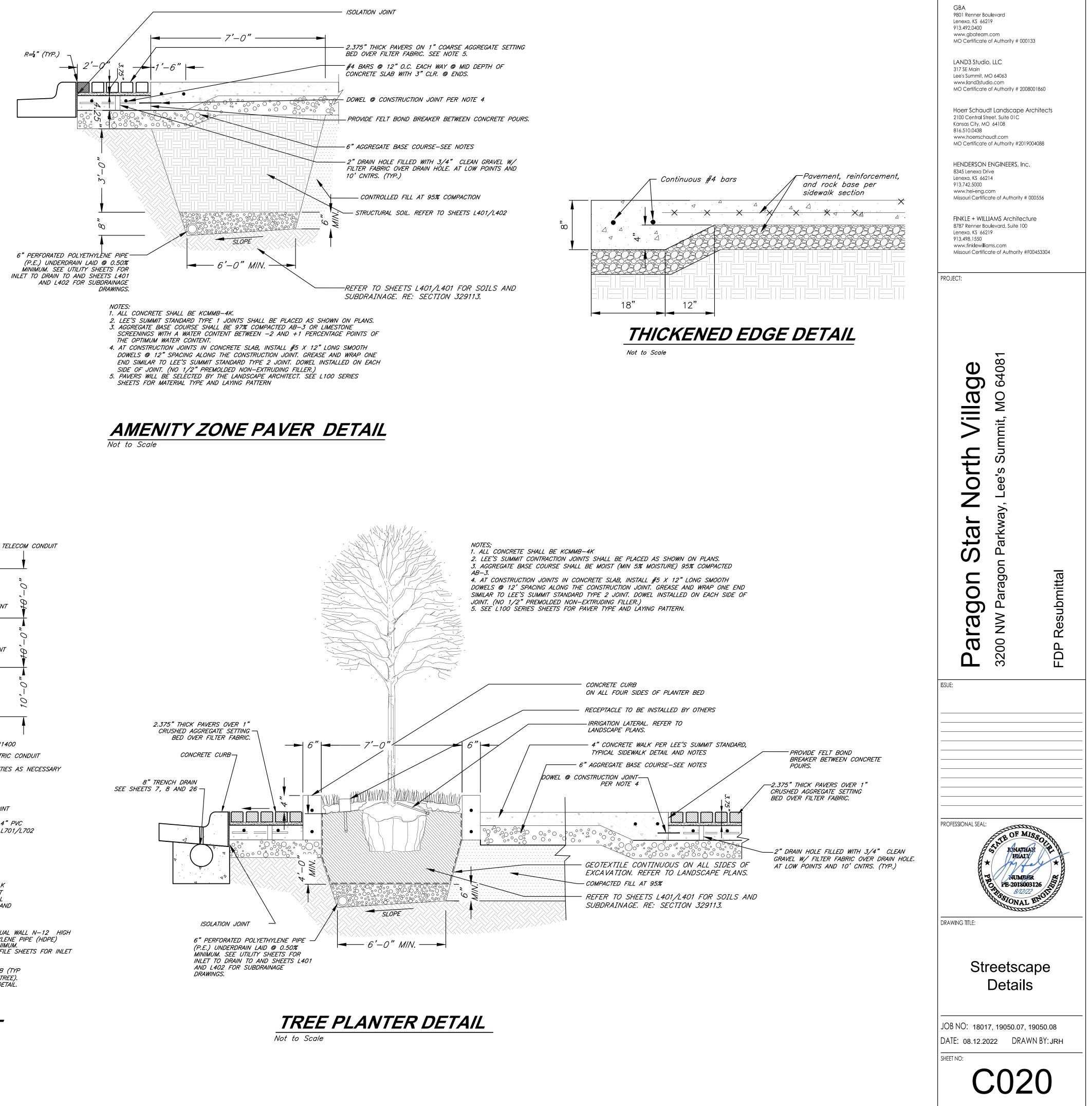


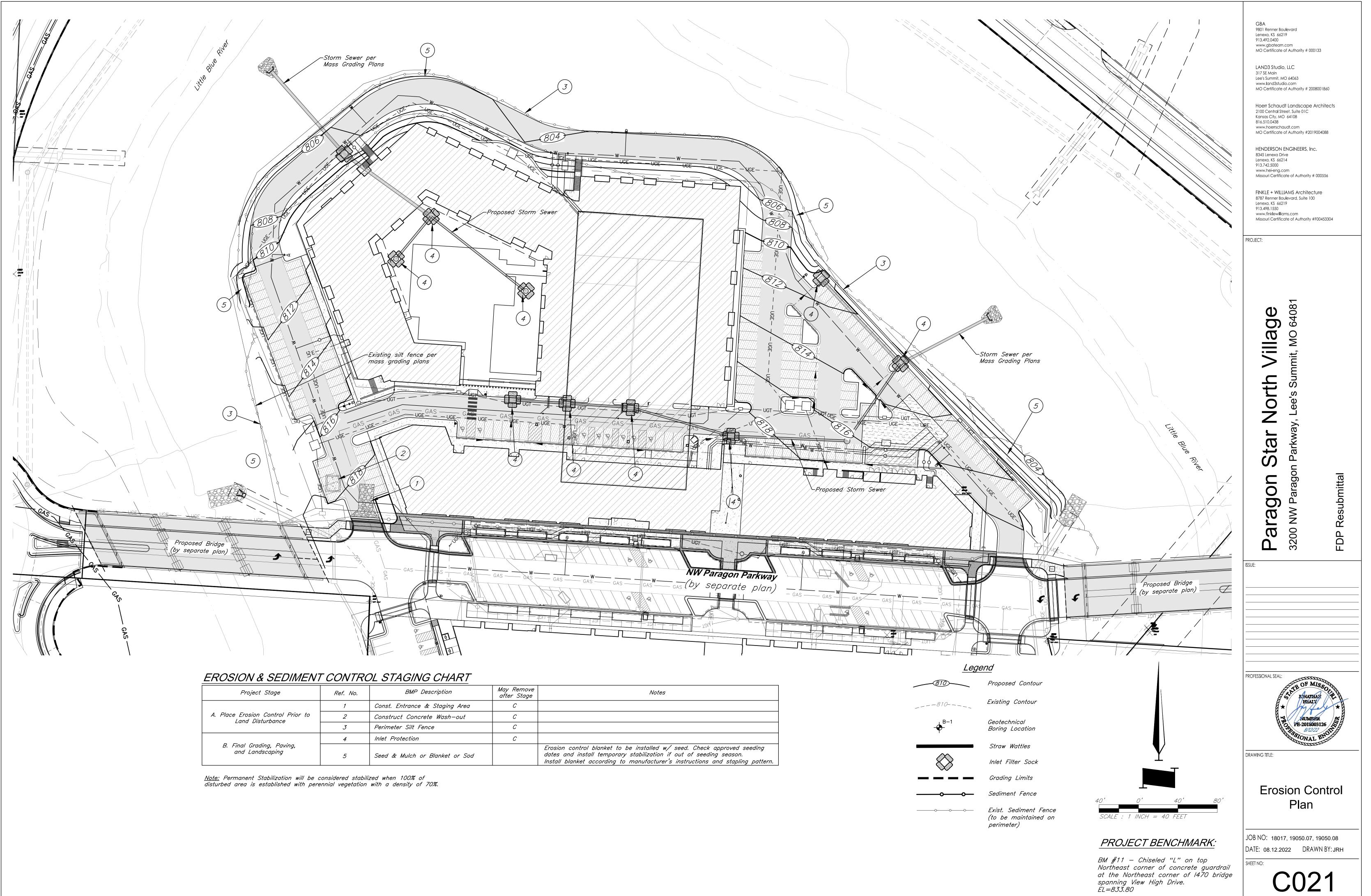




Not to Scale







Project Stage	Ref. No.	BMP Description	May Remove after Stage	Notes
	1	Const. Entrance & Staging Area	С	
A. Place Erosion Control Prior to Land Disturbance	2	Construct Concrete Wash-out	С	
	3	Perimeter Silt Fence	С	
	4	Inlet Protection	С	
B. Final Grading, Paving, and Landscaping	5	Seed & Mulch or Blanket or Sod		Erosion control blanket to be installed w/ seed. Check approved seeding dates and install temporary stabilization if out of seeding season. Install blanket according to manufacturer's instructions and stapling pattern.

EROSION AND SEDIMENT CONTROL NOTES

The layout of erosion control best management practices (BMPs) shown on the engineering plans is intended to control erosion and minimize, if not eliminate, the transport of sediment from the disturbed areas. The Contractor shall be responsible for the evaluation of existing surface drainage patterns and for making adjustments to the BMP locations to best control erosion and minimize, if not eliminate, the transport of sediment from the disturbed areas. The following are measures to achieve the control of erosion and sediment.

- 1. Stabilization Practices Stabilization practices are very effective at preventing erosion by shielding the soil surface from the impact of rain, slowing the velocity of runoff, holding soils in place, and increasing infiltration of runoff and allowing the soil to absorb more rainfall.
 - a. Temporary Seeding Stabilization During acceptable growing periods (see Table 1 below); temporary seeding of annual vegetation with a straw mulch cover shall be used as a temporary cover until permanent vegetation is established. If there is a possibility that a vegetative cover will be required to control erosion for more than 1 year, then consider the addition of a perennial/permanent grass species as part of a seeding mixture.

Table 1. Temporary Seeding Dates and Minimum Application Rates

Seeding Dates	Temporary Seed Species	Minimum Application Rates (pure live seed lbs. per acre)	Straw Mulch (tons per acre)
Jan. 1 – Jan. 31	None	Not Applicable	2.5
Feb. 1 – May 31	Annual Ryegrass	120	1.5
June 1 – Aug.4	None	Not Applicable	2.5
Aug. 15 – Nov. 15	Cereal/Winter Rye	120	1.5
Nov. 16 - Dec. 31	None	Not Applicable	2.5

Seedbed Preparation – For broadcast seeding or drilling, loosen soil to depth of 3 inches. For no till drilling, loosen soil if it is compacted. Loosen compacted, hard or crusted soil surfaces with a disk, ripper, chisel, harrow or other tillage equipment. Avoid preparing the seedbed under excessively wet conditions. For establishment and long-term arowth, apply a complete fertilizer at rates recommended by soil tests or as specified in plans and specifications. If soil pH is less than 6.0, apply lime according to soil tests. Incorporate necessary lime and fertilizer to a depth of 3 to 6 inches of soil.

Installation – For the best results use certified seed. Apply seed uniformly using a cyclone seeder, drop-type spreader, drill, cultipacker seeder or hydroseeder. When using a drill seeder, plant rye or other grains about 1 inch deep and plant grasses no more than $\frac{1}{2}$ inch. A vegetative straw mulch cover shall be applied over the seed mixture to help germinate and establish plant cover, control weeds, and protect seed mixture against temperature extremes. Follow straw mulch preparation and application procedures described herein.

b. Temporary Mulch Stabilization – During non–growing periods, a straw mulch cover shall be applied in unseeded areas to protect against erosion until temporary or permanent vegetation is established.

Site Preparation – Divert runoff water from areas above the site that will be mulched. Remove stumps, roots and other debris from the construction area. Grade area as needed to permit the use of equipment for seeding, mulching and maintenance. Shape area so that it is relatively smooth.

Application – Spread straw mulch uniformly over the area with a power blower, hydroseeder, or by hand. No more than 25% of the ground surface should be visible after spreading. Apply straw mulch at a rate of 1.5 tons per acre as a seed cover or 2.5 tons per acre as a stand alone cover. The straw should be dry, unchopped, unweathered; free of weed seeds and rot. In areas of steep slopes or high winds, or in critical areas such as swales, mulching may need to be secured to the ground with a binder, netting, or tacking.

c. Permanent Seeding Stabilization – All disturbed areas shall be permanently seeded with a cool season grass mixture as specified in the Standards and Specifications of the City of Lee's Summit, Missouri..

Seedbed Preparation - loosen soil to depth of 3 inches. For no till drilling, loosen soil if it is compacted. Loosen compacted, hard or crusted soil surfaces with a disk, ripper, chisel, harrow or other tillage equipment. Avoid preparing the seedbed under excessively wet conditions. For establishment and long-term growth, apply a complete fertilizer at rates recommended by soil tests or as specified in plans and specifications. If soil pH is less than 6.0, apply lime according to soil tests. Incorporate necessary lime and fertilizer to a depth of 3 to 6 inches of soil.

Installation – For the best results use certified seed. Apply seed uniformly using a hydroseeder. A vegetative straw mulch cover shall be applied over the seed mixture to help germinate and establish plant cover, control weeds, and protect seed mixture against temperature extremes. Follow straw mulch preparation and application procedures described in the Standards and Specifications of the City of Lee's Summit, Missouri.

2. Structural Practices

a. Silt Fence – A temporary sediment barrier consisting of a geotextile fabric shall be installed as shown on the attached engineering plans and details. Silt fencing shall be installed to maintain sediment onsite.

Minimum Requirements:

Location - Fence should be built on a nearly level grade and at least 10 feet from the toe of the slope to provide a broad shallow sediment pool. Install on the contour, where fence can intercept runoff as a sheet flow; not located crossing channels, waterways or other concentrated flow paths; not attached to existing trees.

Spacing of Support Posts – 10 feet maximum for fence supported by wire; 6 feet maximum for high strength fabric without supportive wire backing. Support posts should be driven into the ground a minimum of 10 inches deep.

Trench – Bottom 1 foot of fence must be buried minimum of 4 inches deep.

b. Inlet Protection — When installation of the storm drainage system is complete, gravel curb inlet sediment traps will be placed at the drainage system inlets. Construction shall be in accordance with attached engineering plans and details.

c. Stockpiles – The toe of stockpiles shall be placed a minimum of 10 feet from erosion control measures. If stockpiles are to remain for more than 14 days, they shall be temporarily stabilized with vegetative mulch and temporary seeding.

3. Maintenance – The contractor shall repair all erosion control measures or re-seed areas that are disturbed or damaged as a result of weather or other situations, within 2 days after the occurrence. This will include all areas bare of vegetation.



4. Existing vegetation shall be preserved to the extent and where practical. In no case shall disturbed areas remain without vegetative ground cover for a period in excess of 60 days.

5. Additional site management practices which shall be adhered to during the construction process shall include:

-Solid and hazardous waste management including providing trash containers and regular site clean up for proper disposal of solid waste such as building and construction material, product/material shipping waste, food containers and cups, and providing containers for the proper disposal of waste paints solvents, and cleaning compounds.

-Storage of construction materials away from drainage courses and low areas.

-Installation of containment berms and use of drip pans at petroleum product and liquid storage tanks and containers.

6. All disturbed areas shall be seeded, fertilized and mulched, or sodded, in accordance with the Standards and Specifications adopted by the City of Lee's Summit, Missouri and good engineering

practices. This shall be completed within fourteen (14) days after completing the work, in any area. If this is outside of the seeding period, silt barriers or other similarly effective measures shall be provided until such time that the areas can be seeded.

8. Seeding shall be done before the proposed seedbed becomes eroded, crusted over, or dried out and shall not be done when the ground is frozen, or covered with snow. The seed shall comply with requirements of the Missouri Seed Law and the Federal Seed Act. Also, it shall contain no seed of any plant on the Federal Noxious Weed List. Other weed seed shall not exceed one percent by weight of mix.

9. During the dates Dec. 15 through May 30 ALL lime, fertilizer, seed, and mulch shall be applied to finished slopes of disturbed areas. During the months of June, July, October, and November 1st through December 15th, lime, fertilizer, seed, and mulch shall be applied at the following rates:

Lime – 100% of the specified quantity Fertilizer – 75% of the specified quantity Seed – 50% of the specified quantity Mulch – 100% of the specified quantity

10. Mulch shall be Vegetative type, cereal straw form stalks of oats, rye, or barley, or approved equal. The straw shall be free of prohibited weed seed and relatively free of all other noxious and undesirable seed. Apply straw mulch at a rate of 1.5 tons per acre as a seed cover or 2.5 tons per acre as a stand alone cover. Mulch shall be embedded by a mulch anchoring tool or disk type roller having flat serrated disks spaced not more than 10 inches apart and cleaning scrapers shall be provided.

EROSION CONTROL GENERAL NOTES

1. The Contractor is responsible for erosion control during construction and until the Owner and City accepts the work as complete. The erosion control measures shown on this plan are a typical minimum installation. The Contractor shall be responsible for adjusting or adding to these measures as necessary during the phasing of the construction to assure adequate control.

2. Clearing and grubbing within 50' of a defined drainage course should be avoided when possible. Where changes to a defined drainage course occur, work should be delayed until all materials and equipment necessary to protect and complete the drainage change are on site. Changes shall be completed as quickly as possible once the work has been initiated. The area impacted by the construction activities shall be revegetated or protected from erosion as soon as possible, areas within 50' of a defined drainage ways should be recontoured as needed or otherwise protected within five (5) working days after grading has ceased.

3. Where soil disturbing activities cease in an area for more than 14 days, the disturbed areas shall be protected from erosion by stabilizing the area with mulch or other similarly effective erosion control measures. If the slope of the area is greater than 3:1 or if the slope is greater than 3% and greater than 150 feet in length, then the disturbed areas shall be protected from erosion by stabilizing the area with mulch or other similarly effective erosion control measures if activities cease for more than seven (7) days.

-Provisions of portable toilets for proper disposal of sanitary sewage.

7. All erosion control measures, temporary or permanent, require maintenance to preserve their effectiveness. All erosion control devices shall be inspected immediately after each heavy rainstorm and at least daily during prolonged rainfall. Any required repairs should be made immediately. All costs associated with the repair work including related incidentals will be the contractor's responsibility and shall be included in the Contractor's bid for the proposed work. Only after the project is complete and accepted can the erosion control be removed.

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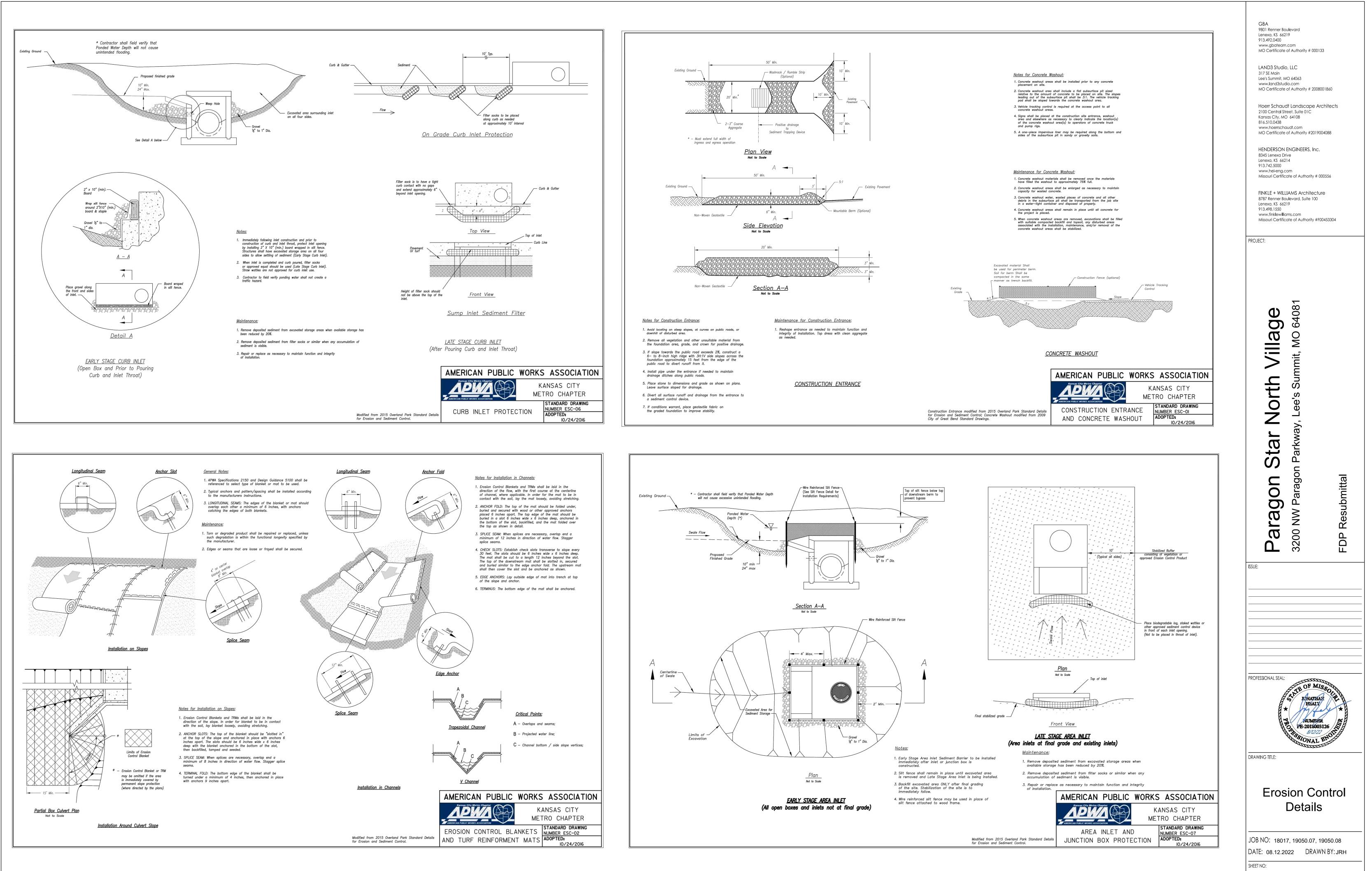
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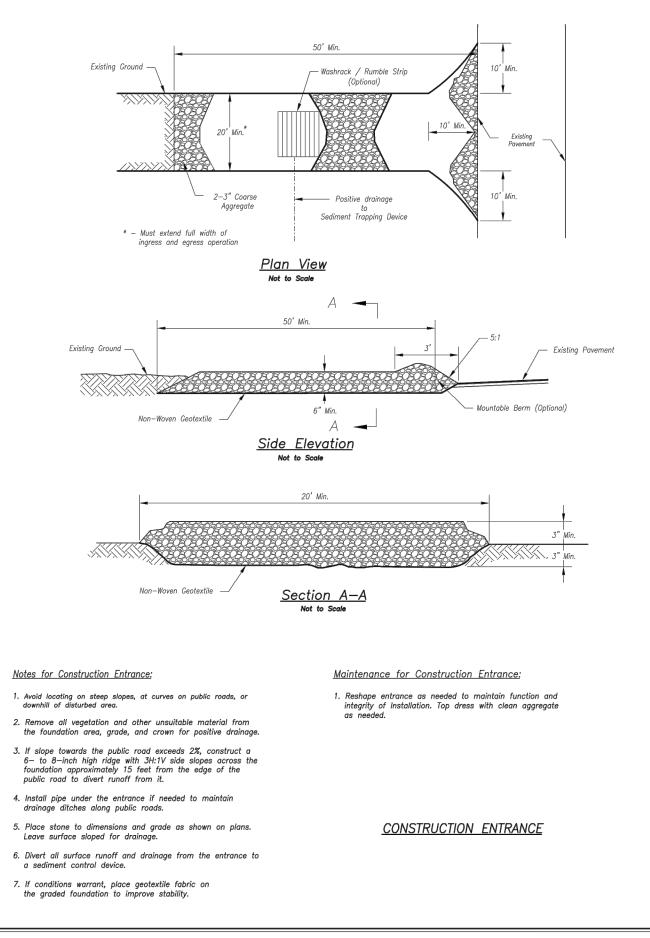
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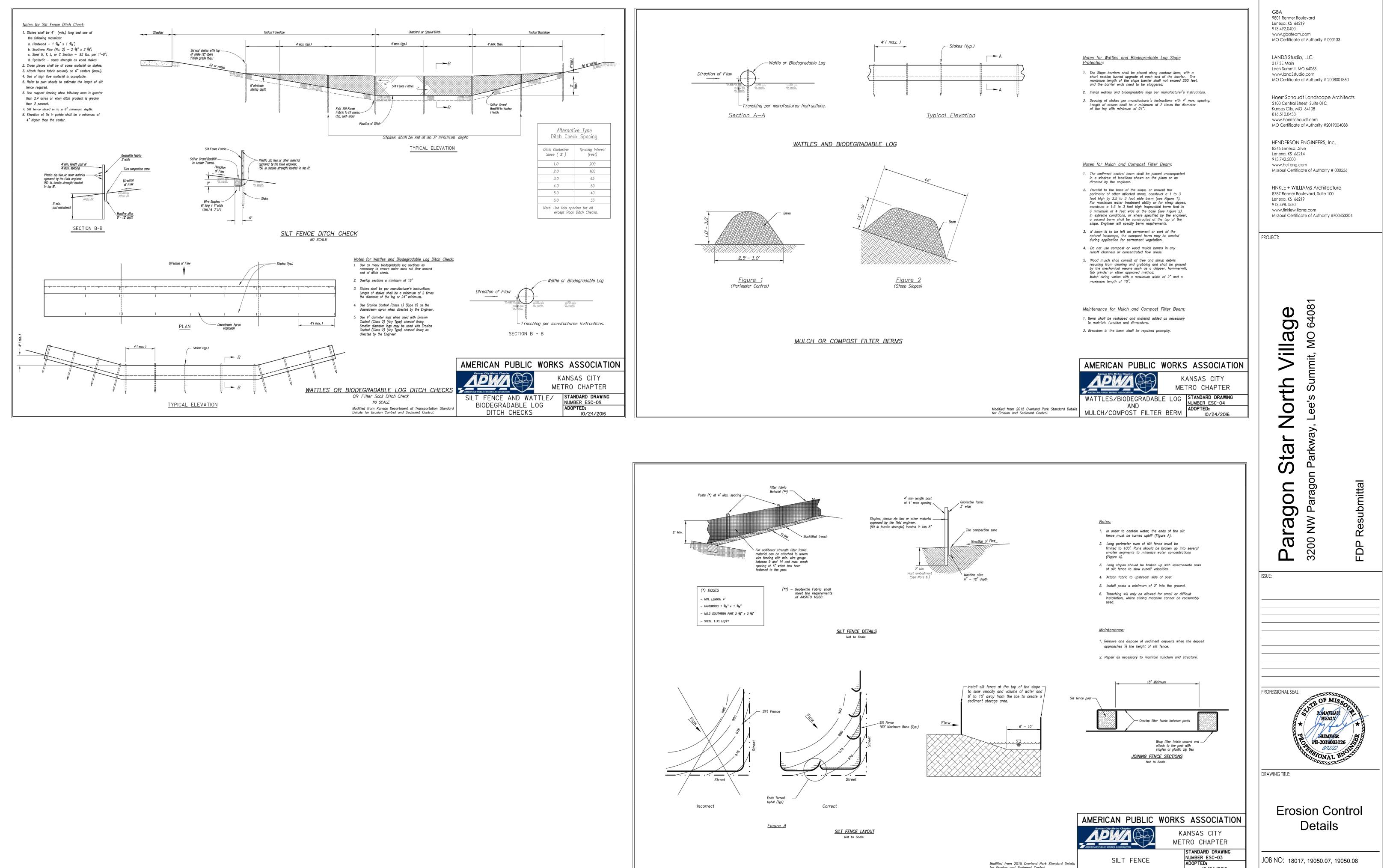


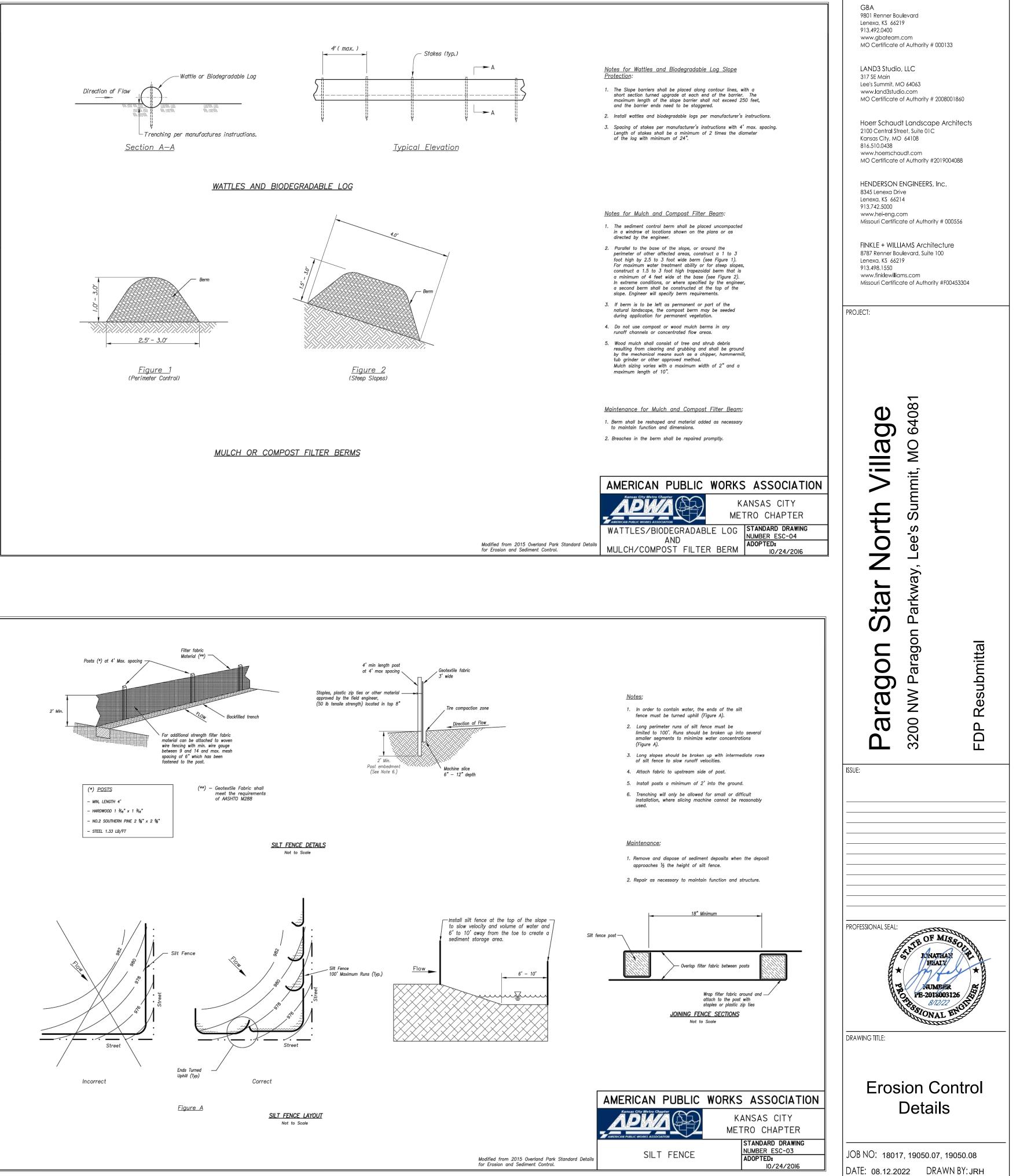
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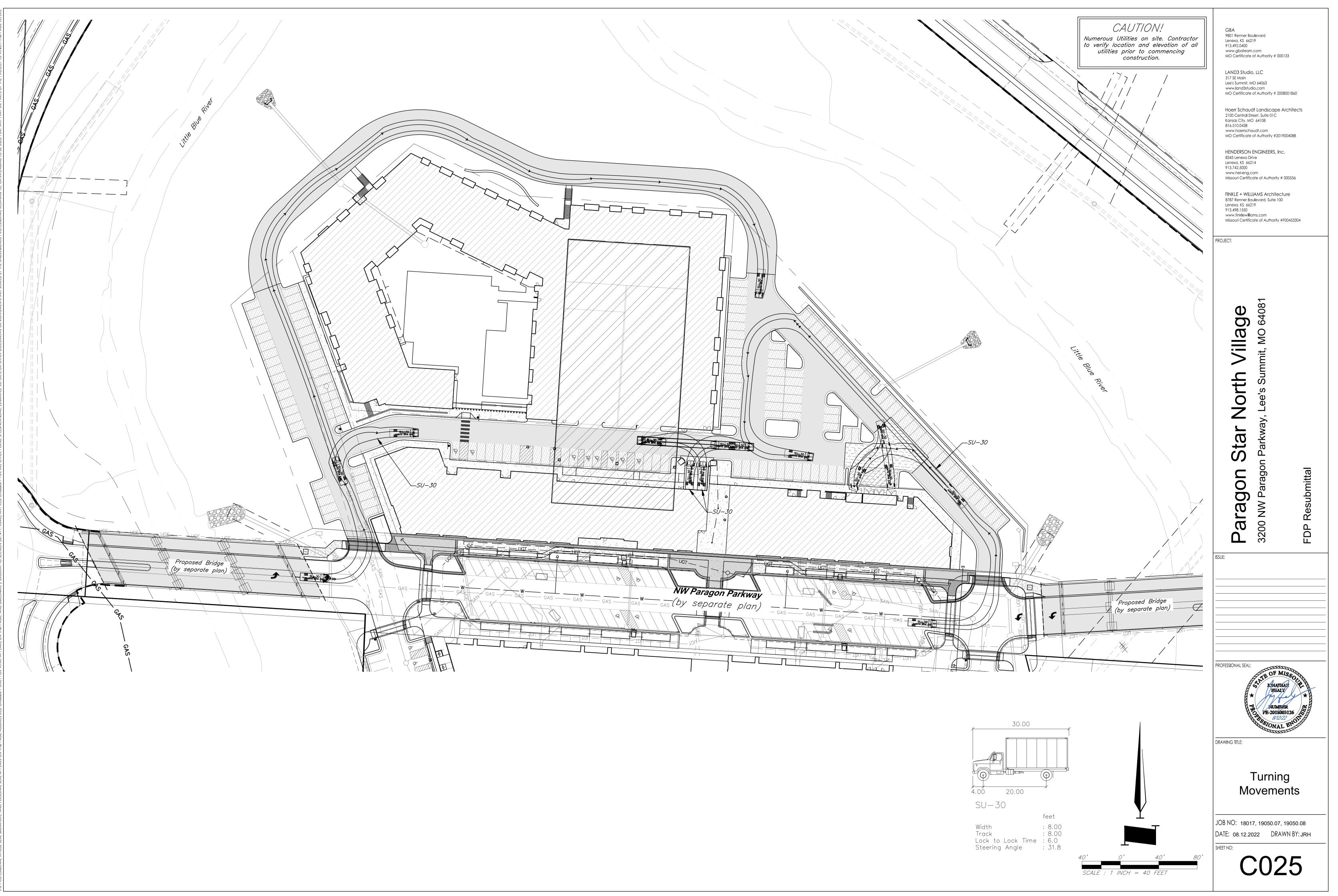


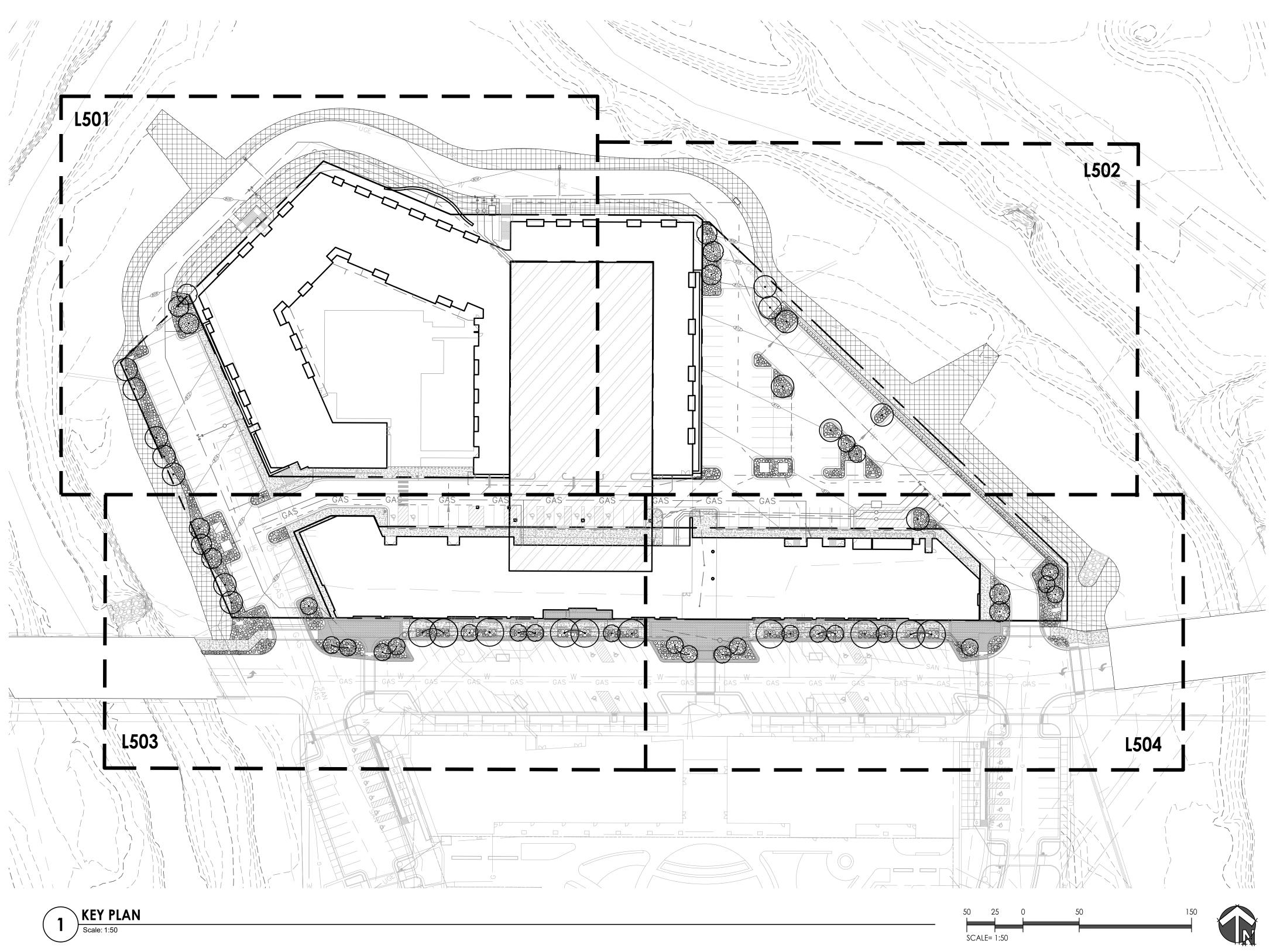
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LANDSCAPE REQUIREMENTS - Paragon Star North Village Final Development Plan
CITY: LEE'S SUMMIT. MISSOURI

Code	Requirement	Location	Dimension	Required	Provided	Additional Note
8.790.A.1 Street Frontage Trees	One (1) tree shall be planted for each 30lf of street frontage	Paragon Parkway	743 LF	25 Trees	27	Trees part of str
8.790.A.2 Street Frontage Green Strip	Any parking or laoding visible from a street shall be separated with a 20 ft wide landscape	East & West Ends of Paragon Parkway		20 FT	20 FT	
8.790.A.3 Street Frontage Shrubs	One (1) shrub shall be provided for each 20ft of street frontage	Paragon Parkway	743 LF	25 Shrubs	25	Provided as par
8.790.B.1 Open Yard Areas	Provide two (2) shrubs per 5,000 square feet of total lot area excluding building footprint area.		120683 SF	48 Shrubs	48	236,554 SF of lc 115,871 SF buil
8.790.B.2 Open Yard Areas	All portions of the site not covered with paving or buildings shall be landscaped.	North Village Lot	N/A			Refer to site lan
8.790.B.3 Open Yard Areas	In addition to trees required based upon street frontage, provide one (1) tree for every 5,000 square feet of lot area not covered by buildings/structures.	North Village Lot	120683 SF	24 Trees	30	236,554 SF of lc 115,871 SF buil
8.810.A Parking Lot Landscaping & Trees	Landscape islands, strips or other planting areas shall constitute 5% of the entire area devoted to parking spaces, aisles and driveways.	Northeast Parking Lot West Parking Lot	42346 SF 22310 SF	2117 SF 1116 SF	2538 SF 1368 SF	
8.810.B Parking Lot Landscaping & Trees	Landscape island shall be located at the end of every parking bay. The island shall be planted in trees, shrubs, grass, or ground cover.	Northeast and West Parking Lots	N/A			Refer to site lan
8.810.C Parking Lot Landscaping & Trees	Tree planting areas shall be no less than ten feet in width. No tree shall be located less than four feet from the back of curb.	Northeast and West Parking Lots	N/A			Refer to site lan

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streetscape designs

part of streetscape design

of lot area uilding footprint

andscape beds

oflotarea uilding footprint

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GENERAL NOTES

I. ALL SITE AND UTILITY INFORMATION SHOWN IS BASED UPON INFORMATION AVAILABLE AT THE TIME OF DESIGN. VERIFY ALL SITE CONDITIONS, ELEVATIONS, UTILITY LOCATIONS AND DIMENSIONS INCLUDING NEW IMPROVEMENTS PRIOR TO COMMENCEMENT OF WORK. NOTIFY OWNER REPRESENTATIVE OF ANY DISCREPANCIES OR IRREGULAR CONDITIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BY CONTACTING ALL OF THE RESPECTIVE UTILITY COMPANIES AND/ OR THE LOCAL "ONE-CALL"/"CALL-BEFORE-YOU-DIG" SYSTEM AND BY EXCAVATING TEST PITS IF NECESSARY.

2. ALL DIMENSIONS SHOWN ARE REPRESENTED USING U.S. SURVEY DIMENSION STANDARDS.

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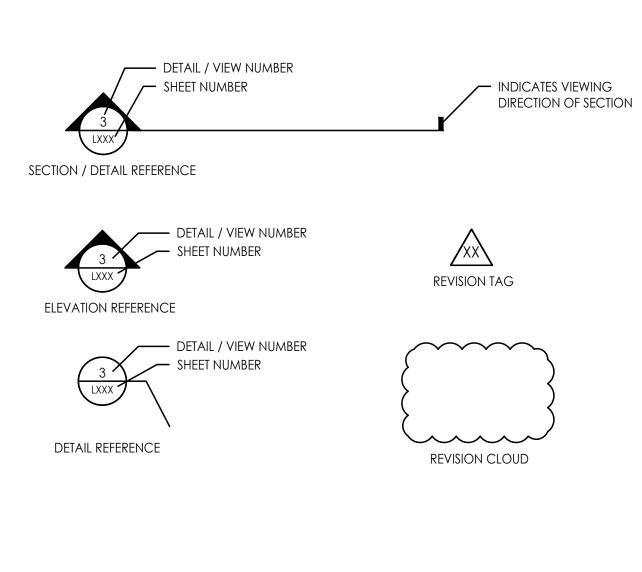
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COMMON ABBREVIATIONS

APPROX	APPROXIMATE
ARCH	ARCHITECT
AVG	AVERAGE
B&B	BALLED AND BURLAPPED
BC	BOTTOM OF CURB
BLDG	BUILDING
BM	BENCHMARK
BOC	BACK OF CURB
BW	BOTTOM OF WALL
CAL	CALIPER
СВ	CATCH BASIN
CF	CUBIC FEET
CIP	CAST IN PLACE
CL	CENTERLINE
CLR	CLEAR, CLEARANCE
CJ	CONTROL JOINT
СМ	CENTIMETER
CO	CLEAN OUT
CONT	CONTINUOUS
CY	
DEG	DEGREE
DEMO DIA	DEMOLISH, DEMOLITION DIAMETER
DIA DIM	DIMENSION
DTL	DETAIL
DWG	DRAWING
E	EAST
ĒA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ENG	ENGINEER
EQ	EQUAL
EST	ESTIMATE
E.W.	EACH WAY
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FL	FLOW LINE
FT	FOOT (FEET)
FTG	FOOTING
GA	GAUGE
GEN	
GR	
hdpe Horiz	HIGH-DENSITY POLYURETHANE HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INV	INVERT ELEVATION
IN	INCH(ES)
INCL	INCLUDE(D)
JT	JOINT
LF	LINEAR FEET
LP	LOW POINT
MAX	MAXIMUM

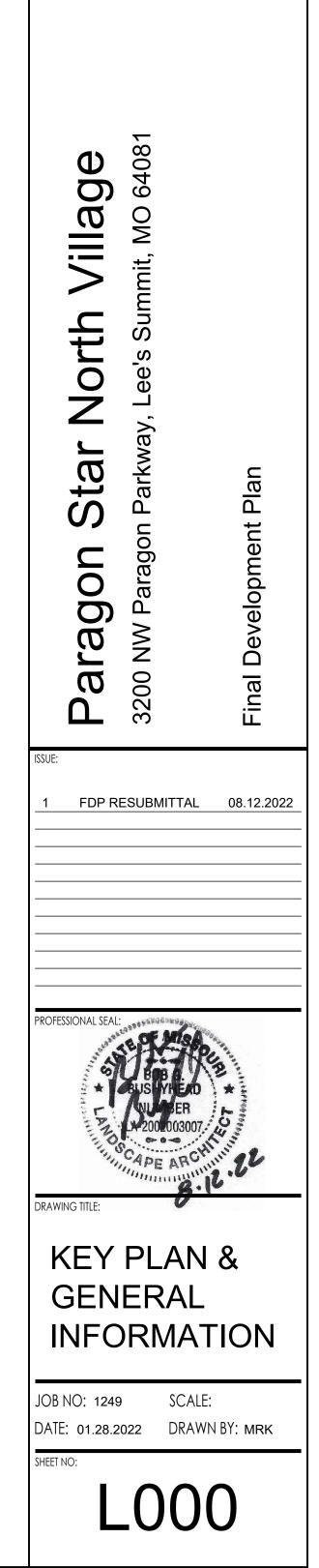
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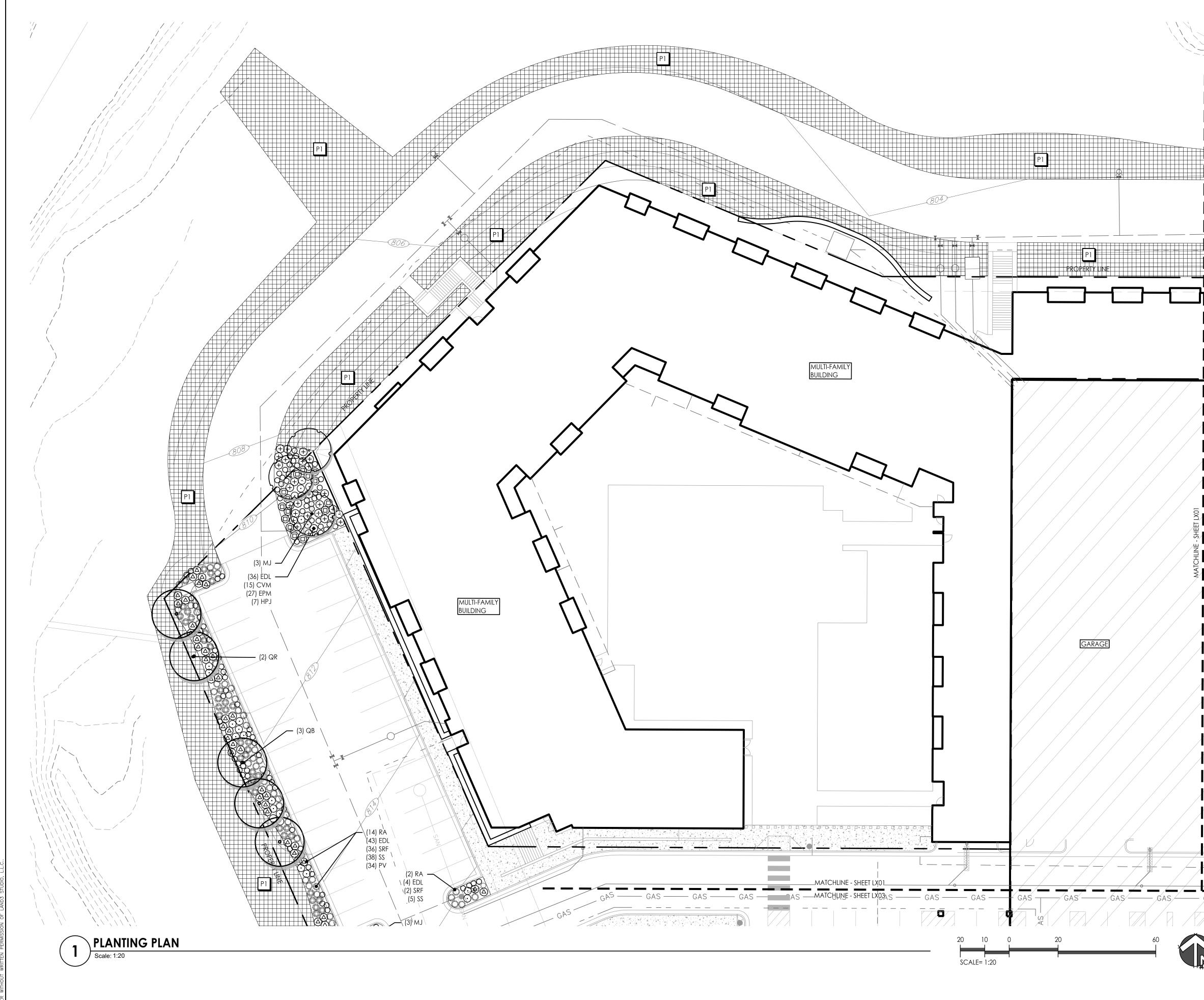
SYMBOLS LEGEND



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PROJECT:





SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REM
$\overline{\frown}$	Shade	STREET TREES	
(\cdot)	AF	Autumn Blaze Maple Acer freemanii 'Autumn Blaze'	3" cal.
	QR	Northern Red Oak Quercus rubra	2.5" cal.
	GT	Sunburst Honeylocust Gleditsia triacanthos inermis 'Sunburst'	3" cal.
	QB	Swamp White Oak Quercus bicolor	2.5" cal.
	GB	Maidenhair Tree Ginkgo biloba 'Fastigiata'	2.5" cal.
$\overline{\frown}$	ORNA	MENTAL TREE	I
\cdot	СС	Eastern Redbud Cercis canadensis	3" cal.
	MJ	Magnolia Magnolia x 'Jane'	3" cal.
	MA	Royal Raindrops® Crabapple Malus 'JFS-KW5'	3" cal.
	AG	Autumn Brillance Serviceberry Amelanchier x grandiflora 'Autumn Brilliance'	3" cal.
\odot	DECID	UOUS SHRUB	I
	RA	Grow-low Sumac Rhus aromatica 'Gro-low'	3 gal.
	HPJ	Little Lime® Hydrangea Hydrangea paniculata 'Jane'	5 gal.
	ORNA	MENTAL GRASS	
	BC	Side Oats Grama Grass Bouteloua curtipendula	3 gal.
	PV	Shennadoah Switchgrass Panicum virgatum 'Shennadoah'	1 gal.
	PAH	Dwarf Fountain Grass Pennisetum alopecuroides 'Hameln''	1 gal.
	SSC	Standing Ovation Little Bluestem Schizachyrium scoparium 'Standing Ovation'	1 gal.
	SS	Little Bluestem Schizachyrium scoparium	1 gal.
***	SH	Prairie Dropseed Sporobolus heterolepis	1 gal.
	PEREN	NIAL/GROUNDCOVER	<u> </u>
\bigcirc	SRF	Rough Goldenrod Solidago rugosa 'Fireworks'	1 gal.
$\overline{\bigcirc}$	CVM	Moonbeam Coreopisi Coreopsis verticillata 'Moonbeam	1 gal.
<u>(</u> +)	EPM	Purple Coneflower Echinacea purpurea 'Magnus'	1 gal.
<u> </u>	PA	Russian Sage Perovskia atriplicifolia	3 gal.
$\overline{\bigcirc}$	EDL	Joe-pye Weed Eupatorium dubium 'Little-Joe'	1 gal.
~	TURF/S	EED MIXES	<u> </u>
P1	Butterf Blue W New J Ameth Switch Little B Indian	Prairie Seed Mix ly Milkweed- Asclepias tuberosa (5%) fild Indigo- Baptisia australis (5%) ersey Tea- Ceanothus americanus (5%) hyst Vernal Witchhazel (10%) grass- Panicum virgatum (13%) luestem- Schizachyrium scoparium (30%) grass- Sorghastrum nutans (20%) ter - Symphotrichum oblongifolium (10%)	

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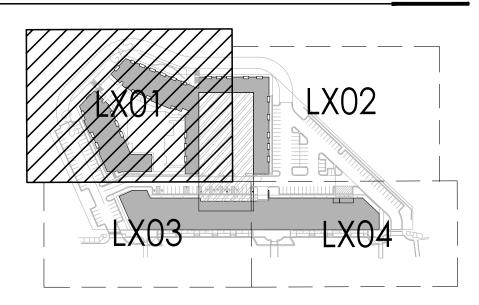
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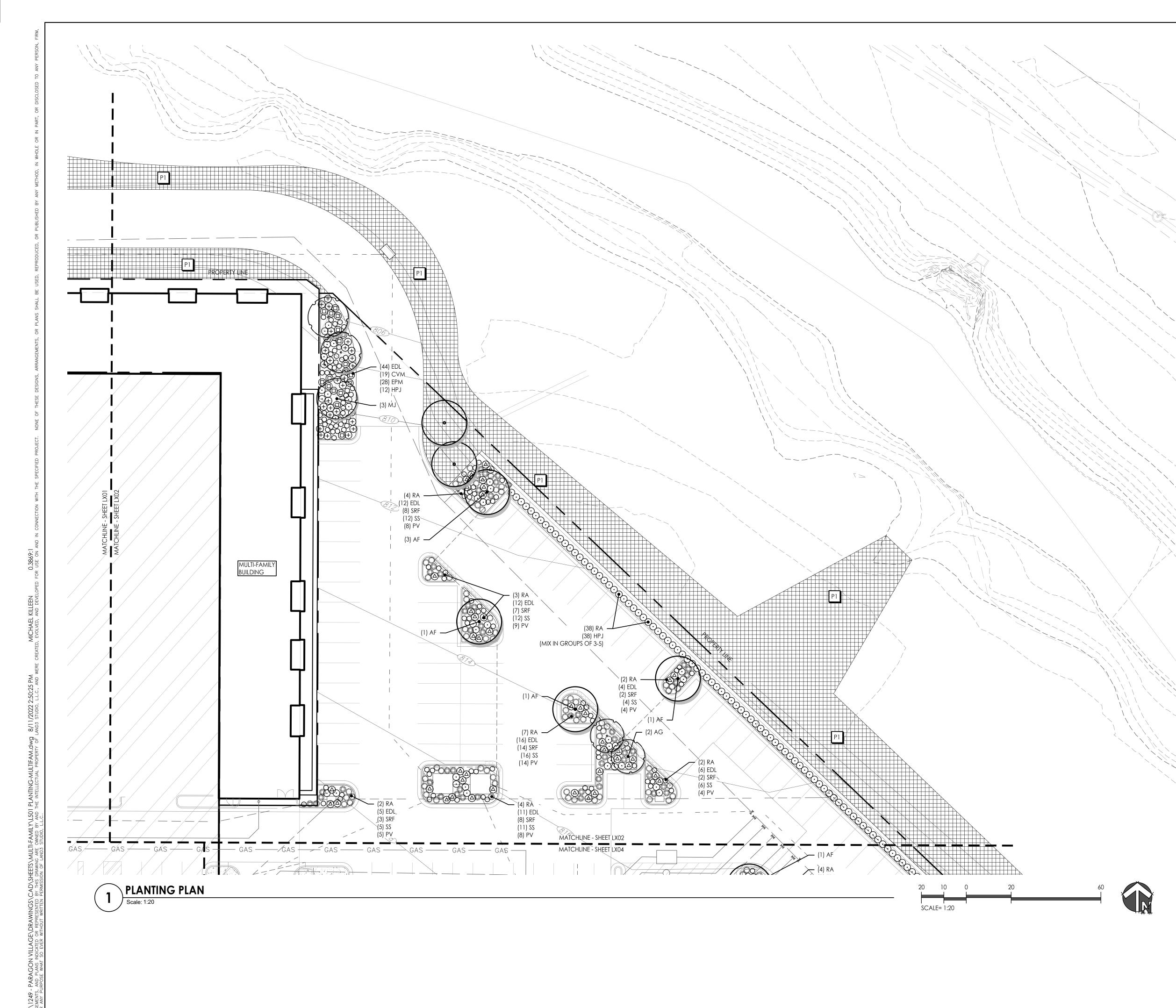
PLANTING NOTES

- I. THIS PLAN PROVIDES LAYOUT, QUANTITY & SIZES OF ALL PLANT MATERIAL TO BE INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO <u>SECTION 329300 - PLANTS</u> AND <u>SECTION 329200 - TURF AND GRASSES</u> FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS & EXECUTION OF WORK.
- 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BY CONTACTING ALL OF THE RESPECTIVE UTILITY COMPANIES AND/ OR THE LOCAL "ONE-CALL"/"CALL-BEFORE-YOU-DIG" SYSTEM AND BY EXCAVATING TEST PITS IF NECESSARY.
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 5.3. PLACE TALLER (AT MATURITY) PLANTS IN THE CENTER OF PLANTERS OR THE TRANSITION EDGE TO NATIVE SEEDED AREAS.

KEY PLAN

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SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REMARK
\frown	Shade	STREET TREES	
\bigcirc	AF	Autumn Blaze Maple Acer freemanii 'Autumn Blaze'	3" cal.
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	GT	Sunburst Honeylocust Gleditsia triacanthos inermis 'Sunburst'	3" cal.
	QB	Swamp White Oak Quercus bicolor	2.5" cal.
	GB	Maidenhair Tree Ginkgo biloba 'Fastigiata'	2.5" cal.
\frown	ORNA	MENTAL TREE	
\cdot	СС	Eastern Redbud Cercis canadensis	3" cal.
	MJ	Magnolia Magnolia x 'Jane'	3" cal.
	MA	Royal Raindrops® Crabapple Malus 'JFS-KW5'	3" cal.
	AG	Autumn Brillance Serviceberry Amelanchier x grandiflora 'Autumn Brilliance'	3" cal.
\odot	DECID	UOUS SHRUB	
	RA	Grow-low Sumac Rhus aromatica 'Gro-low'	3 gal.
	HPJ	Little Lime® Hydrangea Hydrangea paniculata 'Jane'	5 gal.
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	BC	Side Oats Grama Grass Bouteloua curtipendula	3 gal.
	PV	Shennadoah Switchgrass Panicum virgatum 'Shennadoah'	1 gal.
	PAH	Dwarf Fountain Grass Pennisetum alopecuroides 'Hameln''	1 gal.
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\bigtriangleup	SRF	Rough Goldenrod Solidago rugosa 'Fireworks'	1 gal.
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PROJECT:

Paragon Star North Village	3200 NW Paragon Parkway, Lee's Summit, MO 64081	Final Development Plan
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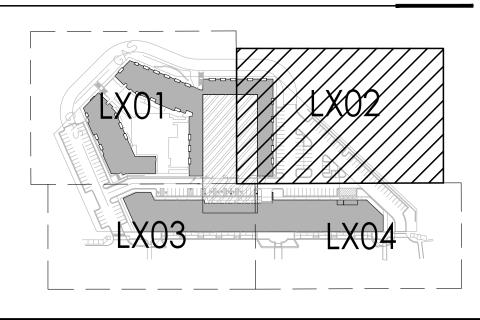
DATE: 01.28.2022 DRAWN BY: MRK

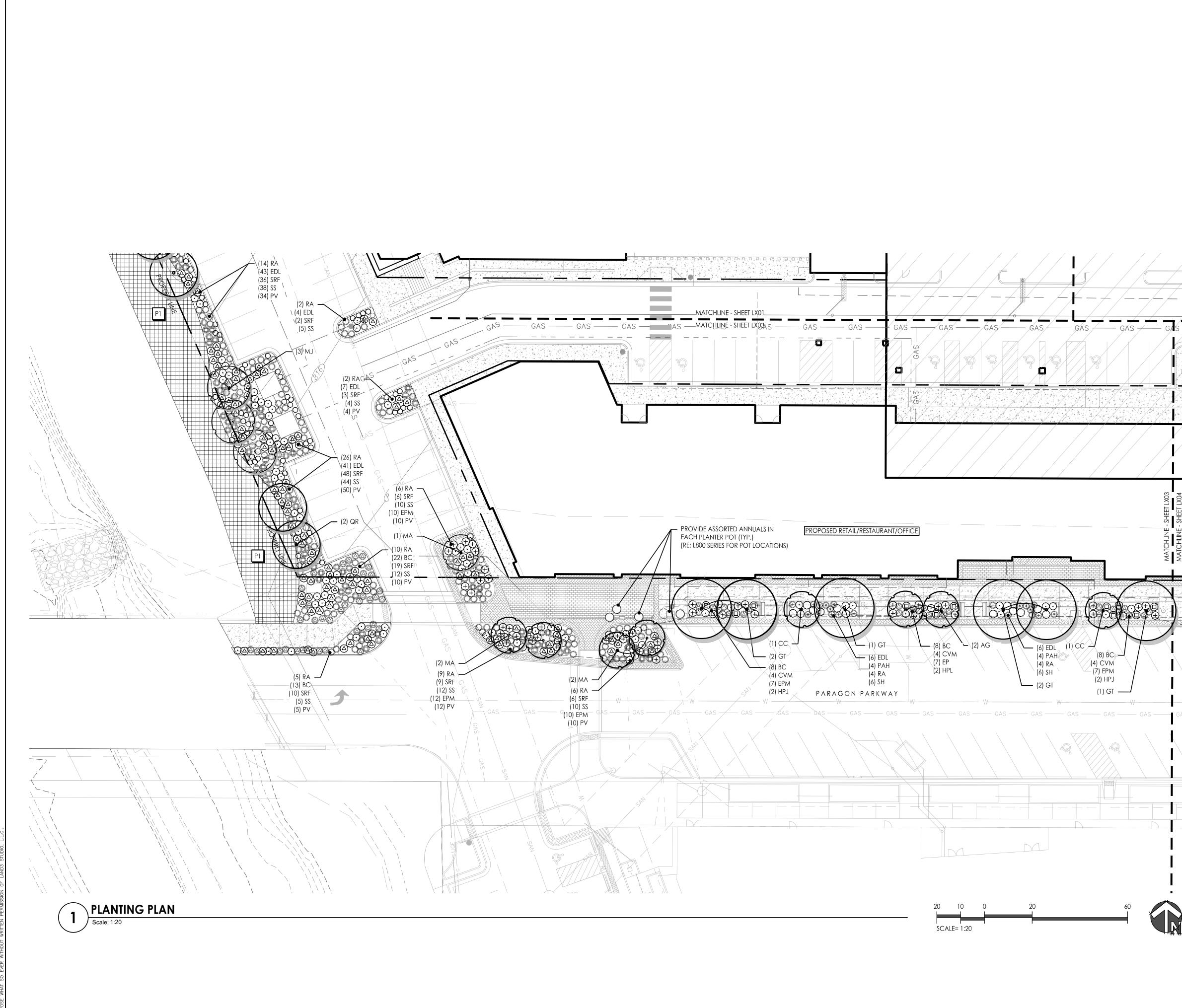
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SHEET NO:

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- **KEY PLAN**





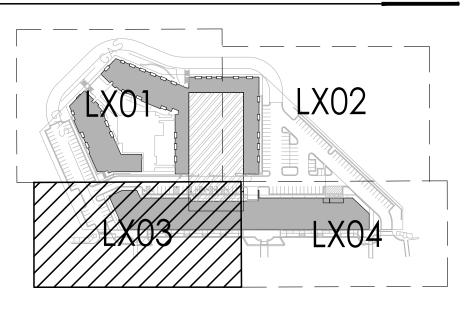
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~	TURF/S	EED MIXES	1
P1	Butterfl Blue W New Je Ameth Switch Little Bl Indians	Prairie Seed Mix y Milkweed- Asclepias tuberosa (5%) ild Indigo- Baptisia australis (5%) ersey Tea- Ceanothus americanus (5%) yst Vernal Witchhazel (10%) grass- Panicum virgatum (13%) uestem- Schizachyrium scoparium (30%) grass- Sorghastrum nutans (20%) er - Symphotrichum oblongifolium (10%)	

PLANTING NOTES

O

- THIS PLAN PROVIDES LAYOUT, QUANTITY & SIZES OF ALL PLANT MATERIAL TO BE INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO <u>SECTION 329300 - PLANTS</u> AND <u>SECTION 329200 - TURF AND GRASSES</u> FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS & EXECUTION OF WORK.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BY CONTACTING ALL OF THE RESPECTIVE UTILITY COMPANIES AND/ OR THE LOCAL "ONE-CALL"/"CALL-BEFORE-YOU-DIG" SYSTEM AND BY EXCAVATING TEST PITS IF NECESSARY.
- 3. LOCATIONS OF ALL PLANT MATERIALS SHALL BE STAKED IN THE FIELD AND
- APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO SEED ALL DISTURBED AREAS BACK TO ORIGINAL FINISHED GRADE ELEVATIONS, INCLUDING, EQUIPMENT MATERIAL STORAGE AREA AND STAGING AREAS ADJACENT TO SITE.
 PLANTING LAYOUT IS NOT INTENDED TO BE EXACT, BUT TO ILLUSTRATE THE DESIGN
- INTENT AS FOLLOWS: 5.1. CLUSTER THE SAME TYPE OF PLANT IN GROUPS OF 2-5, ADJUSTING BASED ON OVERALL PLANT COUNTS IN THE PLANTING BED (FEWER TOTAL PLANTS WILL HAVE SMALLER GROUPINGS, MORE TOTAL PLANTS WILL HAVE LARGER GROUPINGS)
- 5.2. PLACE SHORTER (AT MATURITY) PLANTS AT THE EDGES OF PLANTERS OR WHERE CAR DOORS OR BUMPERS MAY OVERHANG.
 5.3. PLACE TALLER (AT MATURITY) PLANTS IN THE CENTER OF PLANTERS OR THE
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KEY PLAN

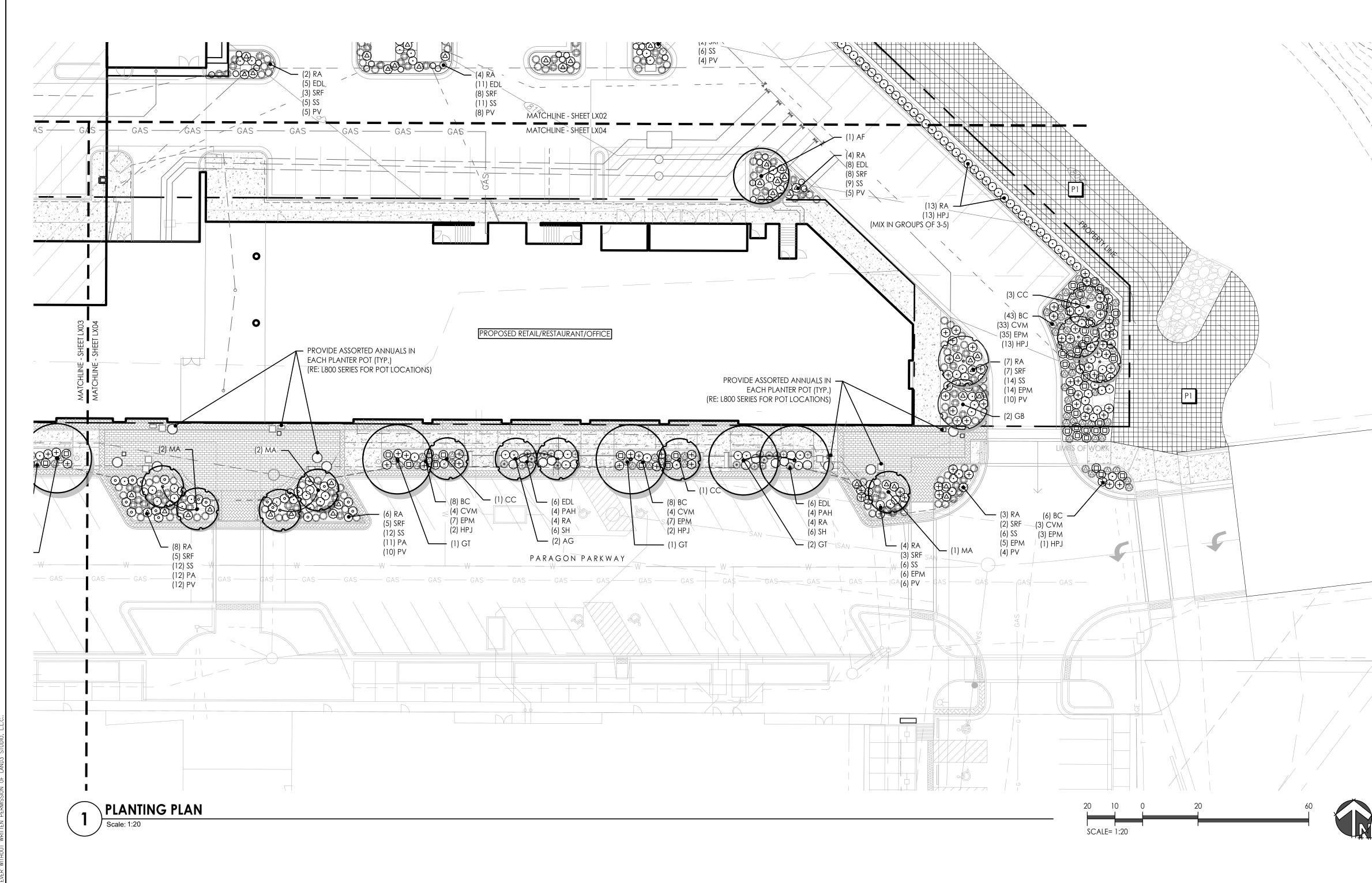


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913.498.1550
www.finklewilliams.com Missouri Certificate of Authority #F00453304

PROJECT:

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SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REMARKS
$\overline{\frown}$	Shade	STREET TREES	
Ċ	AF	Autumn Blaze Maple Acer freemanii 'Autumn Blaze'	3" cal.
	QR	Northern Red Oak Quercus rubra	2.5" cal.
	GT	Sunburst Honeylocust Gleditsia triacanthos inermis 'Sunburst'	3" cal.
	QB	Swamp White Oak Quercus bicolor	2.5" cal.
	GB	Maidenhair Tree Ginkgo biloba 'Fastigiata'	2.5" cal.
	ORNA	MENTAL TREE	
J.	СС	Eastern Redbud Cercis canadensis	3" cal.
	MJ	Magnolia Magnolia x 'Jane'	3" cal.
	MA	Royal Raindrops® Crabapple Malus 'JFS-KW5'	3" cal.
	AG	Autumn Brillance Serviceberry Amelanchier x grandiflora 'Autumn Brilliance'	3" cal.
\odot	DECID	UOUS SHRUB	
	RA	Grow-low Sumac Rhus aromatica 'Gro-low'	3 gal.
	HPJ	Little Lime® Hydrangea Hydrangea paniculata 'Jane'	5 gal.
	ORNA	MENTAL GRASS	
	BC	Side Oats Grama Grass Bouteloua curtipendula	3 gal.
	PV	Shennadoah Switchgrass Panicum virgatum 'Shennadoah'	1 gal.
	PAH	Dwarf Fountain Grass Pennisetum alopecuroides 'Hameln''	1 gal.
	SSC	Standing Ovation Little Bluestem Schizachyrium scoparium 'Standing Ovation'	1 gal.
	SS	Little Bluestem Schizachyrium scoparium	1 gal.
****	SH	Prairie Dropseed Sporobolus heterolepis	1 gal.
	PEREN	NIAL/GROUNDCOVER	
\bigtriangleup	SRF	Rough Goldenrod Solidago rugosa 'Fireworks'	1 gal.
	СУМ	Moonbeam Coreopisi Coreopsis verticillata 'Moonbeam	1 gal.
(+)	EPM	Purple Coneflower Echinacea purpurea 'Magnus'	1 gal.
\odot	PA	Russian Sage Perovskia atriplicifolia	3 gal.
\bigcirc	EDL	Joe-pye Weed Eupatorium dubium 'Little-Joe'	1 gal.
	TURF/S	EED MIXES	_
P1	Butterf Blue W New Ju Ameth Switch Little B Indian	Prairie Seed Mix ly Milkweed- Asclepias tuberosa (5%) (ild Indigo- Baptisia australis (5%) ersey Tea- Ceanothus americanus (5%) hyst Vernal Witchhazel (10%) Igrass- Panicum virgatum (13%) luestem- Schizachyrium scoparium (30%) grass- Sorghastrum nutans (20%) ter - Symphotrichum oblongifolium (10%)	

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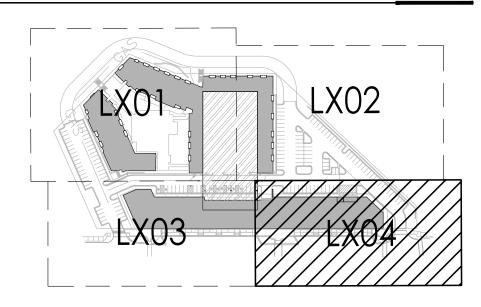
PROJECT:

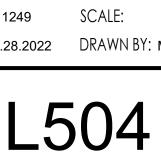
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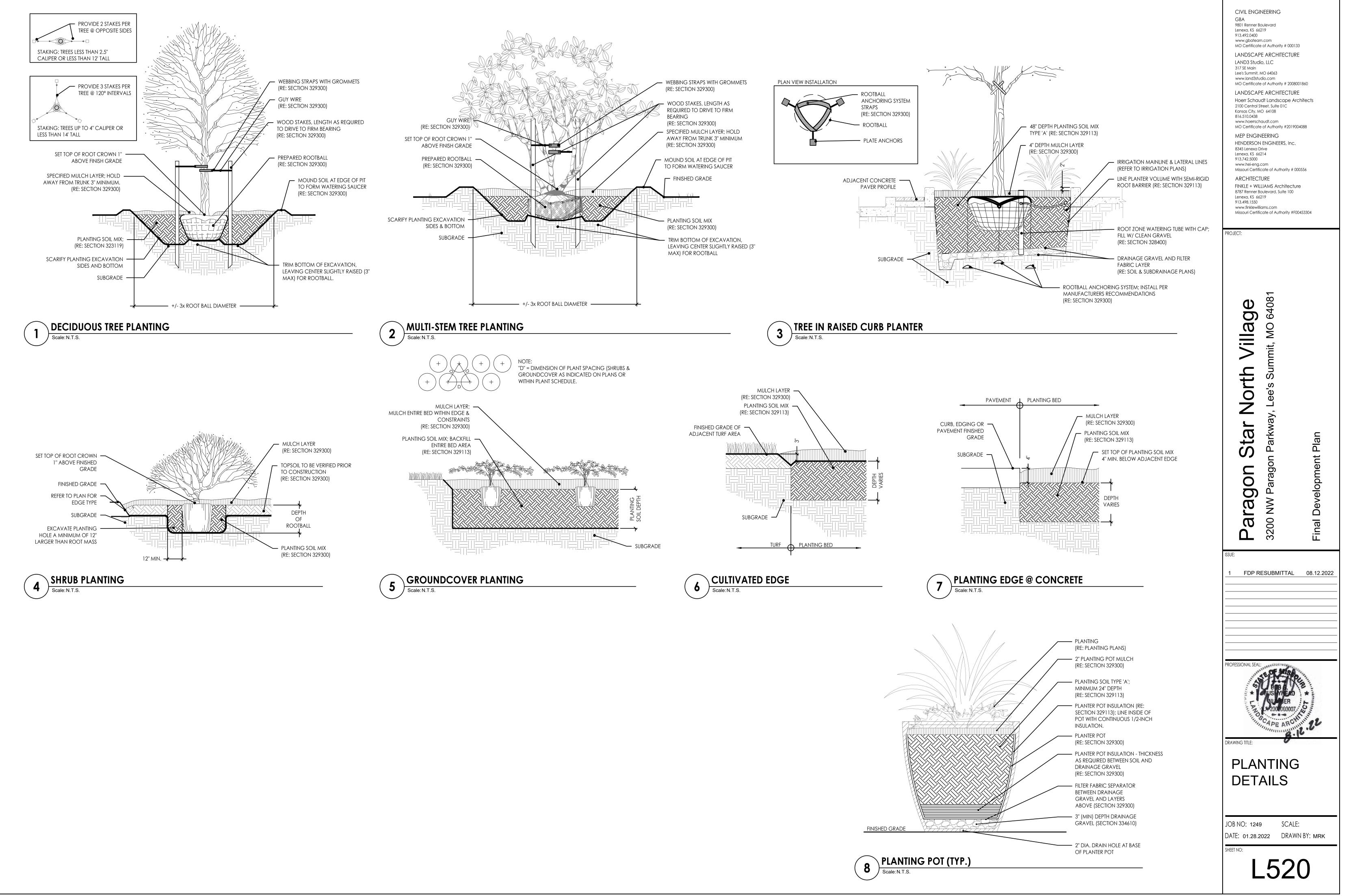
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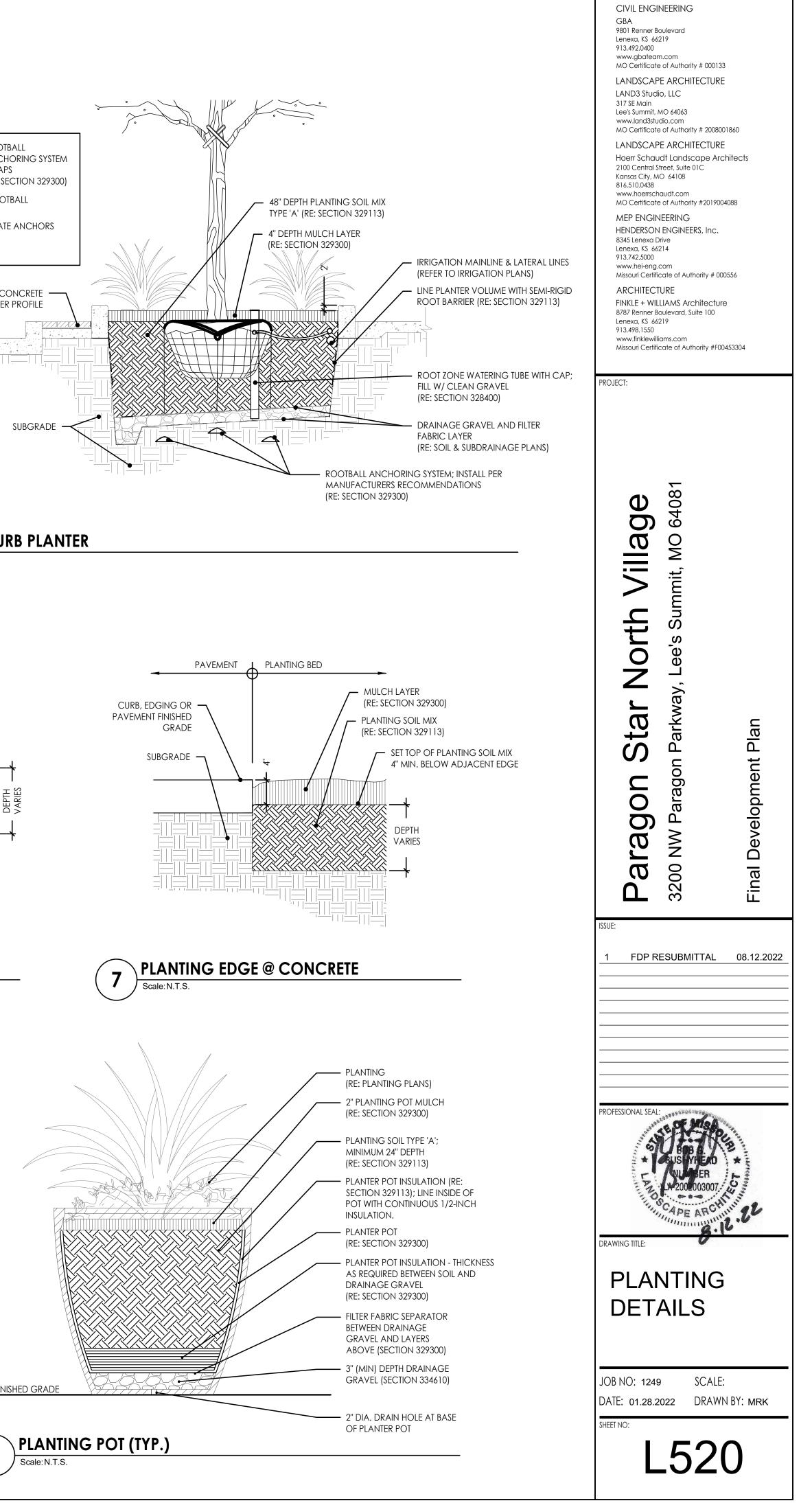


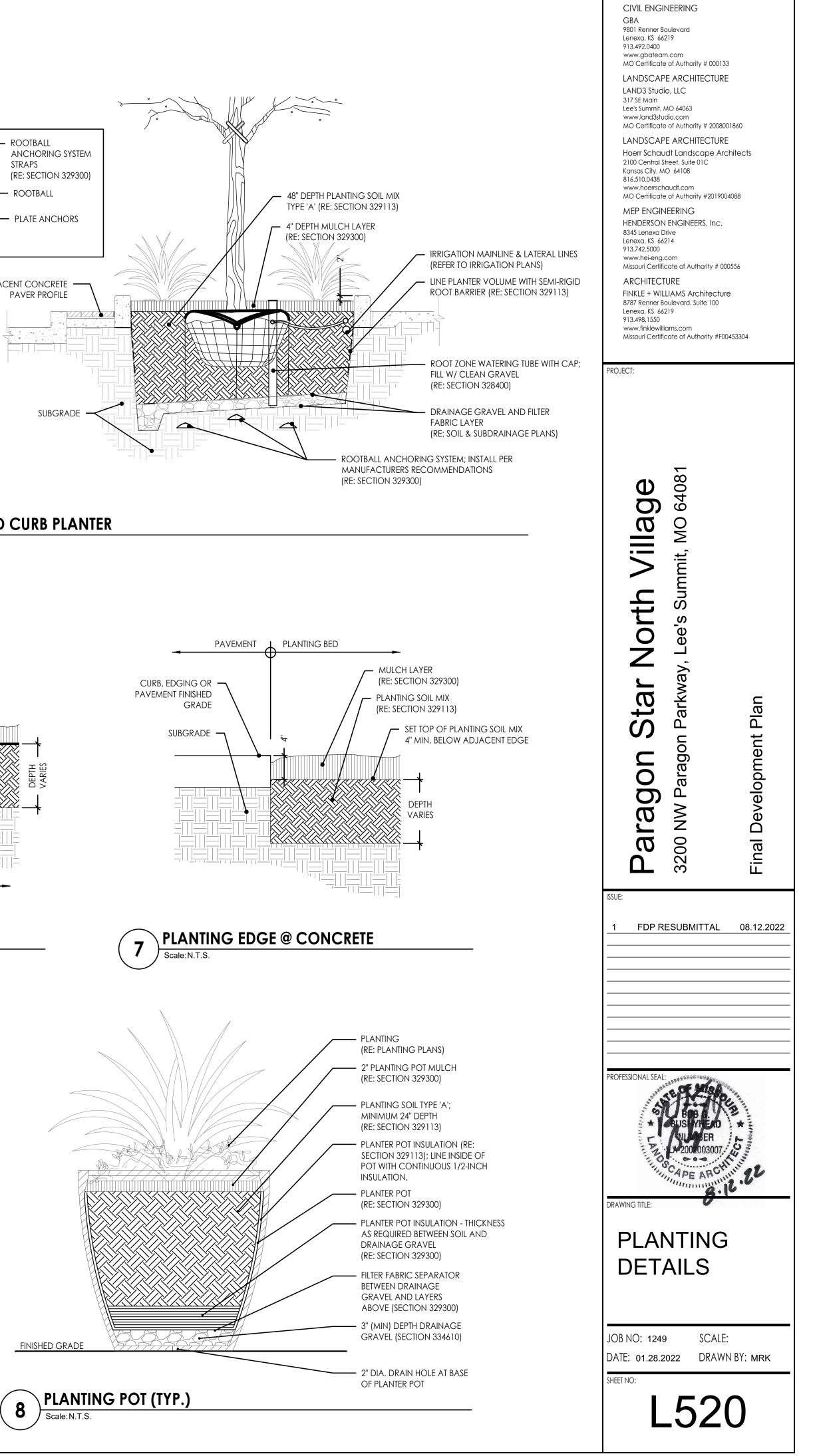
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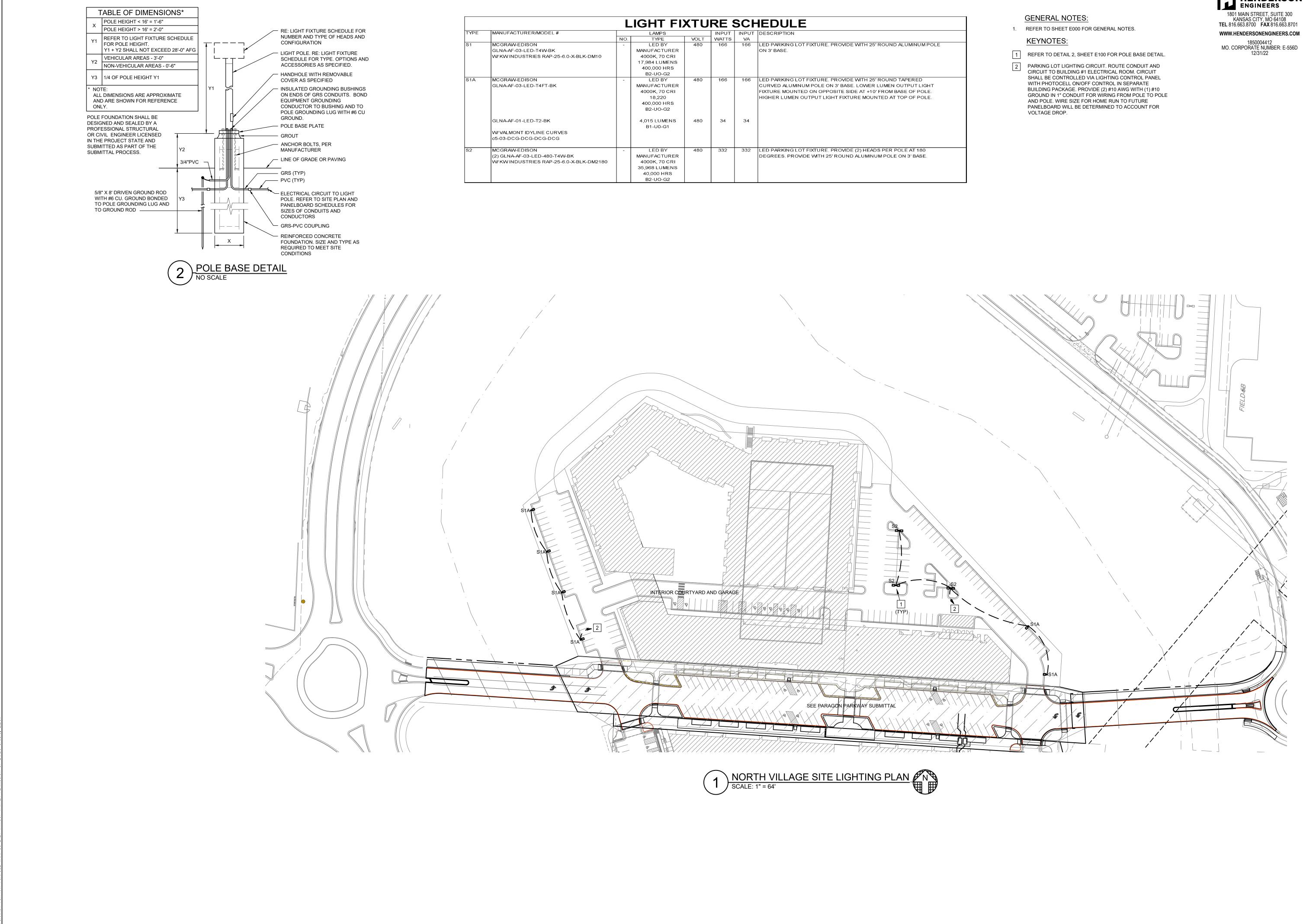




ELECTRICAL SYMBOLS					
THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USE STANDARD MOUNTING HEIGHTS	ED. ANNOTATION	LIGHTING			
THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USE	ANNOTATION Image: Construction of the protection prior notice callout Image: Construction of the protection prior notice callout Image: Construction of the protection prior notice callout Image: Construction of the prior callout of the				
	THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC. EXISTING				
		<u>I</u>			

(REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INF	O) LIGHTING CONTROL DEVICES, WIRING DEVICES & BOXES	ELECTRICAL ONE-LINE & RISER DIAGRAM
	\$ SINGLE POLE SWITCH (NO LETTER DESIGNATION)	SWITCH (RATING AS INDICATED)
a = SWITCHED BY SWITCH "a" A = LIGHT FIXTURE TYPE "A"	SWITCH LETTER DESIGNATIONS AS FOLLOWS: 2 = TWO POLE 3 = THREE-WAY	DRAWOUT CIRCUIT BREAKER (RATINGS AS INDICATED)
	3 4 = FOUR-WAY \$ D = DIMMER	FUSED SWITCH (RATING, POLES AND FUSE TYPE AS INC
\rangle = ARROW INDICATES AIMING DIRECTION	F = FAN SPEED CONTROL K = KEYED LV = LOW VOLTAGE	
LIGHT FIXTURE CIRCUITED AS A NIGHT LIGHT (NL)	OS = OCCUPANCY SENSOR P = SPST PILOT LIGHT VS = VACANCY SENSOR WP = WEATHER PROOF	COMBINATION FUSED SWITCH/STARTER AND STARTER
EMERGENCY LIGHT FIXTURE WITH EMERGENCY LIGHTING BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE	ALC AUTOMATIC LOAD CONTROL RELAY	COMBINATION CIRCUIT BREAKER/STARTER AND START
NIGHT LIGHT/EMERGENCY LIGHT FIXTURE WITH EMERGENCY BATTE PACK OR CONNECTED TO EMERGENCY SOURCE	RY BTS BRANCH CIRCUIT TRANSFER SWITCH	PANELBOARD, SINGLE OR MULTI-SECTION (REFER TO S
LIGHT FIXTURE WITH DUAL BALLASTS CIRCUITED SEPARATELY (SHADING IMPLIES EMERGENCY LIGHT FIXTURE)	SIMPLEX RECEPTACLE - NEMA 5-20R, UNO	ISOLATED POWER PANELBOARD W/ INTEGRAL TRANSFO (REFER TO SCHEDULES)
LIGHTING TRACK WITH LIGHT FIXTURE TYPES AS INDICATED		TRANSFORMER (TYPE AND RATINGS AS INDICATED)
MIRROR LIGHTS	DOUBLE DUPLEX RECEPTACLE - NEMA 5-20R, UNO	SHIELDED TRANSFORMER (TYPE AND RATINGS AS INDIC
EXTERIOR SITE PARKING LOT LIGHT FIXTURE	SPECIAL RECEPTACLE - NEMA TYPE AS NOTED	AUTOMATIC TRANSFER SWITCH (RATINGS AS INDICATE
EXTERIOR PEDESTRIAN POST TOP LIGHT FIXTURE		AUTOMATIC TRANSFER SWITCH WITH BYPASS (RATING INDICATED)
EXTERIOR LIT BOLLARD LIGHT FIXTURE	ISOLATED GROUND TYPE RECEPTACLE*	\##A
EXIT SIGN - CEILING / WALL MOUNTED, ARROWS AS INDICATED, FACE HATCHED	emergency receptacle*	GENERATOR (RATINGS AS INDICATED)
EMERGENCY LIGHTING UNIT EQUIPMENT WITH BATTERY PACK - CEILING/WALL MOUNTED	RECEPTACLE INSTALLED ABOVE COUNTER OR BACKSPLASH*	NON-SEPARATELY DERIVED SOURCE
	RECEPTACLE INSTALLED IN CEILING*	MDP SWITCHBOARD ELEC ROOM ### AMPS 480Y/277V 3/0 4W SWITCHGEAR, SWITCHBOARD AND/OR DISTR
AFEA (AREA FOR EVACUATION ASSISTANCE) SIGN - CEILING/WALL MOUNTED, ARROWS AS INDICATED	RECEPTACLE INSTALLED IN FLOOR*	PANELBOARD (TYPE, RATING, DEVICES AND A AS INDICATED)
QUIPMENT & DEVICES	RECEPTACLE INSTALLED VIA DROP CORD*	DIGITAL COMBINATION DIGITAL VOLT METER/AMMETER
 ELECTRICAL PANELBOARD (SURFACE OR FLUSH MOUNT) TERMINAL CABINET (SURFACE OR FLUSH MOUNT), TYPE AS NOTED 	RECEPTACLE LETTER DESIGNATIONS AS FOLLOWS: C = AUTOMATICALLY CONTROLLED	### CIRCUIT IDENTIFICATION (REFER TO CIRCUIT SCHEDUL
PLYWOOD TERMINAL BOARD FOR TELEPHONE SYSTEM, UNO. SIZE A	CH = CLOCK HANGER TYPE D = DEMOLISHED s II WR/WP E/ETR/EX = EXISTING	GFR GROUND FAULT RELAY
NOTED	GFCI = GROUND-FAULT CIRCUIT INTERRUPTER H = HORIZONTALLY MOUNTED	PFR PHASE FAILURE RELAY
SWITCHBOARD OR MOTOR CONTROL CENTER ON HOUSEKEEPING PA	R = RELOCATED S = MANUALLY SWITCHED	KK# KIRK-KEY INTERLOCK (# INDICATES KEY PAIR)
ELECTRICAL DISTRIBUTION PANELBOARD	TR = TAMPER RESISTANT TV = TELEVISION USB = USB/DUPLEX	ST SHUNT TRIP
TRANSFORMER	WP = WEATHER PROOF COVER WR = WEATHER RESISTANT	AM AMMETER (RANGE AS SPECIFIED OR REQUIRED)
MOTOR	MULTI-OUTLET ASSEMBLY	VM VOLTMETER (RANGE AS SPECIFIED OR REQUIRED)
DISCONNECT SWITCH - "200/3/150/3R" DENOTES AMPERES/POLE/FUSE/NEMA ENCLOSURE RATING, NF= NON-FUSED,		UTILITY METER (AS REQUIRED BY UTILITY)
CB= CIRCUIT BREAKER (200/3/CB), NO VALUE (200/3/150) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 RATING	🖸 🔽 Image: Data outlet	AS AMMETER SWITCH
COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTEF "30/3/15/1/3R" DENOTES AMPERES/POLE/FUSE/NEMA STARTER	R V V V MULTI-SERVICE OUTLET; TELEPHONE AND DATA	VS VOLTMETER SWITCH
SIZE/NEMA ENCLOSURE RATING. NF= NON-FUSED, CB= CIRCUIT BREAKER (30/3/CB/1), NO VALUE (200/3/150/1) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 ENCLOSURE RATING		D WATT-HOUR METER, "D" DENOTES DEMAND REGISTER,
MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED. 3-POLE, UNO	FLOOR, TYP	
MANUAL MOTOR STARTER DISCONNECT	A MULTI-SERVICE POWER POLE WITH TELEPHONE, DATA AND POWER	CURRENT TRANSFORMER RATING AS SPECIFIED OR RE
FRACTIONAL HORSEPOWER MANUAL CONTROLLER	OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS	
INTEGRAL HORSEPOWER MANUAL CONTROLLER	A MULTI-SERVICE FLOOR BOX WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND	SPD SURGE-PROTECTIVE DEVICE
VARIABLE FREQUENCY DRIVE	SPECIFICATIONS	
RELAY OR CONTACTOR (IN SCHEMATICS)	POKE THROUGH, A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS	GROUND CONNECTION WITH TEST WELL
CONTACTOR (SIZE, COIL VOLTAGE AND NUMBER OF POLES AS INDICATED)	THERMOSTAT	
TIME SWITCH		
PHOTOCELL	BLANK FACE GFCI FEED THROUGH DEVICE	= Z CONTACT (OPEN OR CLOSED)
INDICATING LIGHT		HEATER
EMERGENCY POWER OFF BUTTON	REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL DEVICE SYMBOLS AND DEFINITIONS SPECIFIC TO THIS PROJECT.	MOTOR
STOP-START PUSH BUTTON CONTROL STATION	*SYMBOL DEMONSTRATED WITH DUPLEX RECEPTACLE, WHEN USED IN COMBINATION WITH OTHER DEVICES MEANING IS SIMILAR FOR THOSE DEVICE TYPES.	## BLOCK LOAD KW OR KVA
HAND-OFF-AUTO PUSH BUTTON CONTROL STATION	SIGNALING	× F# × FP# FAULT POINT REFERENCED IN SHORT CIRCUIT CURREN
MUSHROOM-TYPE PUSH BUTTON	B SIGNALING BELL	VULIAGE DRUP OPREADOREE I
OVERHEAD PADDLE FAN	B SIGNALING BUZZER	
	T LV TRANSFORMER	

ED) S INDICATED) TER SIZE ARTER SIZE TO SCHEDULES) NSFORMER) NDICATED) ATED) INGS AS	<image/> <image/> <image/> <section-header><text><text></text></text></section-header>	CIVIL ENGINEERING GBA 9801 Renner Boulevard Lenexa, KS 66219 913.492.0400 www.gbateam.com MO Certificate of Authority # 000133 LANDSCAPE ARCHITECTURE LAND3 Studio, LLC 317 35 Main Lee's Summit, MO 64063 www.land3studio.com MO Certificate of Authority # 2008001860 LANDSCAPE ARCHITECTURE Hoer Schaudt Landscape Architects 2100 Central Street, Suite 01C Kansas City, MO 64108 816.510.0438 www.hoerrschaudt.com MO Certificate of Authority #2019004088 MEDERSON ENGINEERS, Inc. 8345 Lenexa Drive Lenexa, KS 66214 913.742.5000 www.hei-eng.com Missouri Certificate of Authority # 000556 ARCHIECTURE FINLE + WILLIAMS Architecture 8787 Renner Boulevard, Suite 100 Lenexa, KS 66219 913.498.1550 www.finklewilliams.com Missouri Certificate of Authority #F00453304
STRIBUTION IND ACCESSORIES		Paragon Star North Village 3200 NW Paragon Parkway, Lee's Summit, MO 64081 Final Development Plan
RENT AND		ISUE: 1 FDP RESUBMITTAL 08.12.2022 08.12.2022 08.12.2022 PROFESSIONAL SEAL: PROFESSIONAL SEAL: PROFESSIONAL SEAL: PROFESSIONAL SEAL: NUMBER PE-2013039892 08/11/2022 DRAWING ITTLE: LIGHTING SYMBOLS AND DRAWING ITTLE: JOB NO: 1249 SCALE: DATE: 08.12.2022 DRAWN BY: MAP
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MANUFACTURER/MODEL #		LAMPS		INPUT	INPUT	DESCRIPTION
	NO.	TYPE	VOLT	WATTS	VA	
MCGRAW-EDISON	-	LED BY	480	166	166	LED PARKING LOT FIXTURE. PROVIDE WITH 25' ROUND ALUMINUM POLE
GLNA-AF-03-LED-T4W-BK		MANUFACTURER				ON 3' BASE.
W/ KW INDUSTRIES RAP-25-6.0-X-BLK-DM10		4000K, 70 CRI				
		17,984 LUMENS				
		400,000 HRS				
		B2-UO-G2				
MCGRAW-EDISON	-	LED BY	480	166	166	LED PARKING LOT FIXTURE. PROVIDE WITH 25' ROUND TAPERED
GLNA-AF-03-LED-T4FT-BK		MANUFACTURER				CURVED ALUMINUM POLE ON 3' BASE. LOWER LUMEN OUTPUT LIGHT
		4000K, 70 CRI				FIXTURE MOUNTED ON OPPOSITE SIDE AT +10' FROM BASE OF POLE.
		18,220				HIGHER LUMEN OUTPUT LIGHT FIXTURE MOUNTED AT TOP OF POLE.
		400,000 HRS				
		B2-UO-G2				
GLNA-AF-01-LED-T2-BK		4,015 LUMENS	480	34	34	
		B1-U0-G1				
W/ VALMONT IDYLINE CURVES						
c5-03-DCG-DCG-DCG						
MCGRAW-EDISON	-	LED BY	480	332	332	LED PARKING LOT FIXTURE. PROVIDE (2) HEADS PER POLE AT 180
(2) GLNA-AF-03-LED-480-T4W-BK		MANUFACTURER				DEGREES. PROVIDE WITH 25' ROUND ALUMINUM POLE ON 3' BASE.
W/ KW INDUSTRIES RAP-25-6.0-X-BLK-DM2180		4000K, 70 CRI				
		35,968 LUMENS				
		40,000 HRS				
		B2-UO-G2				

HENDERSON ENGINEERS

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PROJECT:

6408 ge illa МО lit, rth Su ິ 0 **(**) Ζ ta Plan S Δ ц U O ag Final Developm arag 3200 NW Ω FDP RESUBMITTAL 08.12.2022 PROFESSIONAL SEAL: ANDREA C MULVANY andr un mu NUMBER F-20130398 ANDREA C. MULVAN LICENSE # PE-2013039892 08/11/2022 DRAWING TITLE: NORTH VILLAGE SITE LIGHTING PLAN scale: JOB NO: 1249 DATE: 08.12.2022 DRAWN BY: MAP HEET NO: E100

Division 26: GENERAL ELECTRICAL REQUIREMENTS

- . GENERAL INSTRUCTIONS
- A. GENERAL REQUIREMENTS

All requirements under Division 01 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 01, this section and division take precedence. Become thoroughly familiar with all its contents as to requirements that affect this division, section, or both. Work required under this division includes all material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate the function of each system as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and any portion of work described in one shall be provided as if described in both. In the event of discrepancies, notify the Engineer and request clarification prior to proceeding with the Work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They convey the scope of work, indicating the intended general arrangement of the systems without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory, and properly operating system.

B. DEFINITIONS

Division: References contained in this specification follow the numbering system defined in the Construction Specifications Institute (CSI) MasterFormat 2004 Edition. Specification Divisions 01 through 13 provided with this project may reference the CSI MasterFormat 1995 Edition. The

corre	esponding division references between the 2004	Edition and 1995 Edition are as follows:
	2004 Edition	1995 Edition
1.	Division 21 - Fire Suppression	Division 15
2.	Division 22 - Plumbing	Division 15
3.	Division 23 - HVAC	Division 15
4.	Division 26 - Electrical	Division 16
5.	Division 27 - Communications	Division 16
6.	Division 28 - Electronic Safety and Security	Division 16

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site including, but not limited to, the actual unloading. unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use.'

Provide: "to furnish and install."

Furnished by Owner (or Owner-Furnished) or Furnished by Others: "an item furnished by the Owner or under other divisions or contracts and installed under the requirements of this division complete and ready for the intended use. including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: Where referenced in this Division, "Engineer" is the Engineer of Record and the Design professional for the work under this division, and is a consultant to, and an authorized representative of the Architect, as defined in the General and/or Supplementary Conditions. When used in this division, Engineer means increased involvement by and obligations to the Engineer, in addition to involvement by and obligations to the Architect.

AHJ: The local code and/or inspection agency (Authority) Having Jurisdiction over the Work.

NRTL: Nationally Recognized Testing Laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project. Nationally recognized testing laboratories and standards listed are used only to represent the characteristics required and are not intended to restrict the use of other NRTLs that are acceptable to the AHJ and standards that meet the specified criteria.

Homerun: That portion of an electrical circuit originating at a junction box, termination box, receptacle, or switch with termination at an electrical panelboard. Note: Where MC cable is utilized for receptacle and/or lighting branch circuiting loads, the originating point of the homerun shall be at the first load in the circuit or at a junction box located in an accessible ceiling space as close as possible to the first load.

Substitution: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions include Value

Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the Engineer as equivalent to the item or manufacturer specified". The term 'approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

C. PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to comply with this requirement shall not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

D. MATERIAL AND WORKMANSHIP

Provide new material, equipment, and apparatus under this contract unless otherwise stated herein of best quality normally used for the purpose in good commercial practice, and free from defects. Model umbers listed in the specifications or shown on the drawings are not necessarily intended to designate the required trim, written descriptions of the trim govern model numbers.

Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish guality, size, and capacity. All workmanship shall be of the finest possible by experienced mechanics of the proper trade. In general, provide the following quality grade(s) for all materials and equipment.

Commercial specification grade:

Provide all hoists, scaffolds, staging, runways, tools, machinery, and equipment required for the performance of the electrical work. Store and maintain material and equipment in clean condition, and protected from weather, moisture, and physical damage.

Furnish only material and equipment that are listed, labeled, certified, or all three, by an NRTL whenever any listing or labeling exists for the types of material and equipment specified.

At a minimum, general work practices for electrical construction shall be in accordance with NECA 1 (latest edition), "Standard Practices for Good Workmanship in Electrical Construction".

E. MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers are listed alphabetically and not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 vears

F. COORDINATION

Coordinate all work with other divisions and trades so that various components of the systems are installed at the proper time, fit the available space, and allow proper service access to those items requiring maintenance. Components which are installed without regard to the above shall be relocated at no additional cost to the Owner.

Unless otherwise indicated, the General Contractor shall provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the General Contractor with information where chases and openings are required. Contractor shall keep informed as to the work of other trades engaged in the construction of the project and shall execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor shall be held responsible for errors that could have been avoided by proper checking and inspection.

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the specifications or shown on the drawings are not intended to designate the required trim.

Make all offsets required to clear equipment, beams, and other structural members, and to facilitate concealing raceways in the manner anticipated in the design. Provide materials with trim that will fit properly the types of ceiling, wall, or floor finishes actually installed.

G. ORDINANCES AND CODES

Work performed under this contract shall, at a minimum, be in conformance with applicable national. state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ, cluding any amendments and standards as set forth by the following:

National Fire Protection Association (NFPA) Underwriters Laboratories (UL)

- Occupational Safety and Health Administration (OSHA)
- American National Standards Institute (ANSI)
- American Society of Testing Materials (ASTM)

6. Rules and regulations of public utilities and municipal departments affected by connection of services. 7. Other national standards and codes where applicable.

Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence. Where conflicts between various codes, ordinances, rules and regulations exist, comply with the most stringent.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the attention of the Architect and Engineer for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for, and furnish certificates of inspection to Owner. Provide all safety lights, guards, and warning signs required for the performance of the work and for the safety of the public.

H. PROTECTION OF EQUIPMENT AND MATERIALS

Store and protect from damage equipment and materials delivered to job site. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material damaged by construction activities shall be rejected, and Contractor shall furnish new equipment and material of a like kind at his own expense.

Keep premises broom clean of foreign material created during work performed under this contract. Conduit, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of conduits while stored and installed during construction when not in use to prevent the entrance of debris into the systems.

I. SUBSTITUTIONS

Materials, products, equipment, and systems described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by the proposed substitution. The base bid shall include only the products from manufacturers specifically named in the drawings and specifications. To request a substitution, request the Substitution Request Form from the Architect or Engineer. Complete and send the Substitution Request From for each material, product, equipment, or system that is proposed to be substituted. The burden of proof of the merit of the proposed substitution is upon the proposer.

Unless stated otherwise in writing to the Engineer by the Contractor, Contractor warrants to the Engineer Architect, and Owner the following:

Proposed substitution has been fully investigated and determined to meet or exceed the specified Work in all respects unless stated otherwise in the substitution request. Proposed substitution is consistent with the Contract Documents and will produce indicated results, including functional clearances, maintenance service, and sourcing of replacement parts.

- Proposed substitution has received necessary approvals of authorities having jurisdiction. Same warranty will be furnished for proposed substitution as for specified Work.
- If accepted substitution fails to perform as required, Contractor shall replace substitute material or system with that originally specified and bear costs incurred thereby.

6. Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

No substitutions will be considered unless the Substitution Request Form is completed and attached with the appropriate substitution documentation. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by the Engineer at least ten (10) calendar days prior to the date for receipt of bids.

If the proposed substitution is approved prior to receipt of bids, such approval will be stated in an addendum. Bidders shall not rely upon approvals made in any other way. Verbal approval will not be given. No substitutions will be considered after the contract is awarded unless specifically provided in the contract documents

Provide factory generated point-by-point calculations for all exterior light fixtures (photometric files supplied so the engineer can generate a point-by-point do not suffice for the point-by-point calculations). Provide interior point-by-point calculations at the discretion of the engineer.

J. SUBMITTALS

Assemble and submit for review shop drawings, material lists, manufacturer product literature for equipment to be furnished, and items requiring coordination between contractors under this contract. Provide submittals in sufficient detail so as to demonstrate compliance with these Contract Documents and the design concept. Prior to transmitting submittals, verify that the equipment submitted is mutually compatible with and suitable for the intended use, will fit the available space, and maintain manufacturer recommended service clearances. If the size of equipment furnished makes necessary any change in location or configuration, submit a shop drawing showing the proposed layout.

Transmit submittals as early as required to support the project schedule. Allow two weeks for Engineer review time, plus to/from mailing time via the Architect, plus a duplication of this time for resubmittals, if required. Only resubmit those sections requested for resubmittal.

Submittals shall contain the project name, applicable specification section, submittal data, equipment identifications acronym as used on the drawings, and the Contractor's stamp. The stamp shall certify that the submittal has been checked by the Contractor, complies with the drawings and specifications, and is coordinated with other trades. Manufacturer product literature shall include shop drawings, product data. performance sheets, samples, and other submittals required by this division. Highlight, mark, list, or indicate the materials, performance criteria, and accessories that are being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without

Submittals and shop drawings shall not contain firm name, logo, the seal, or signature of the Engineer. They shall not be copies of the work product of the Engineer. If the Contractor desires to use elements of such product, refer to paragraph "Electronic Drawing Files" for procedures to be used.

Separate submittals according to individual specification sections. Illegible submittals will be rejected and returned without review. Catalog data shall be properly bound, identified, indexed and tabbed in a 3-ring binder. Each item or model number shall be clearly marked and accessories indicated. Label the catalog data with the equipment identification acronym or number as used on the drawings and include performance curves, capacities, sizes, weights, materials, finishes, wiring diagrams, electrical requirements and deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if the above mentioned requirements are not met. Provide the quantity of submittals required by Division 01. If not indicated and hard-copy sets are provided, submit a minimum of six (6) copies. Refer to Division 01 for acceptance of electronic submittals for this project. For electronic submittals, Contractor shall submit the documents in accordance with the

procedures specified in Division 01. Contractor shall notify the Architect and Engineer that the submittals have been posted. If electronic submittal procedures are not defined in Division 01, Contractor shall include the website, user name, and password information needed to access the submittals. For submittals sent by e-mail, Contractor shall copy the designated representatives of the Architect and Engineer. Contractor shall allow for the Engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the submittal.

The checking and subsequent acceptance of submittals by the Engineer and/or Architect shall not relieve the Contractor from responsibility for deviations from the drawings and specifications, errors in dimensions, details, sizes of equipment, or quantities, omissions of components or fittings, coordination of electrical requirements, and not coordinating items with actual building conditions and adjacent work. Contractor shall request and secure written acceptance from the Engineer and Architect prior to implementing any deviation.

K. ELECTRONIC DRAWING FILES

In preparation of shop drawings or record drawings, Contractor may, at his option, obtain electronic drawing files in AutoCAD or DXF format on CD-ROM disk, DVD disk, flash drive, or direct download, as desired, from the Engineer for a shipping and handling fee of \$200 for a drawing set up to 12 sheets and \$15 per sheet for each additional sheet. Contact the Architect for written authorization and Engineer for the necessary agreement form and to specify shipping method and drawing format. In addition to payment, the written authorization from the Architect and release agreement form from the Engineer must be received before electronic drawing files will be sent.

L. RECORD DRAWINGS (AS-BUILT DRAWINGS)

During progress of the work in this division, Contractor shall maintain an accurate record of all changes made during the installation of the system. Upon completion of the work, accurately transfer all record information to three identical sets of the approved shop drawings. Insert one set into each copy of the manual described below.

- See Division 01 and General Conditions for additional information.
- M. OPERATION AND MAINTENANCE INSTRUCTIONS

During the course of construction, collect and compile a complete brochure of equipment furnished and installed on this project. Include operational and maintenance instructions, manufacturer's catalog sheets. wiring diagrams, parts lists, approved submittals and shop drawings, warranties, and descriptive literature as furnished by the equipment manufacturer. Include an inside cover sheet that lists the project name, date, Owner, Architect, Engineer, General Contractor, Sub-Contractor, and an index of contents.

Submit three copies of literature bound in approved binders with index and tabs separating equipment types to the Architect, for Engineer's review, at the termination of the work. Paper clips, staples, rubber bands, loose-leaf binding, and mailing envelopes are not considered approved binders. Final approval of systems installed under this contract shall be withheld until this equipment brochure is received and deemed complete by the Architect and Engineer. Instruct workmen to save required literature shipped with the equipment itself for inclusion in this brochure.

Include Record Drawings as described above. Refer to Division 01 for acceptance of electronic manuals for this project. For electronic manuals, refer to

N. WARRANTIES

paragraph "Submittals" for requirements.

Warrant each system and each element thereof against all defects due to faulty workmanship, design, or material for a period of 12 months from date of Substantial Completion, unless specific items are noted to carry a longer warranty in these construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects occurring within the warranty period(s) as stated in the General Conditions and Division 01

Also warrant the following additional items: All raceways are free from obstructions, holes, crushing, or breaks of any nature. All raceway seals are effective.

Perform the remedial work promptly, upon written notice from the Engineer or Owner.

The entire electrical system is free from all short circuits and unwanted open circuits and grounds. At the time of Substantial Completion, deliver to the Owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the one year period and any actions the

Owner must take in order to maintain warranty status. Each warranty instrument shall be addressed to the Owner and state the commencement date and term 2. GENERAL MATERIALS AND INSTALLATION

A. EXCAVATION AND BACKFILLING

Perform excavation and backfill required for installation of underground work under this contract.

Trenches shall be of sufficient width. Crib or brace trenches to prevent cave-in or settlement. Do not excavate trenches close to columns and walls of new building without prior consultation with the Architect. Use pumping equipment if required to keep trenches free of water. Backfill trenches in maximum 6-inch layers of well tamped dry earth in a manner to prevent future settlement.

Excavation as specified herein shall be classified as common excavation. Common excavation shall comprise the satisfactory removal and disposition of material of whatever substances and of every description encountered, including rock, if any, within the limits of the work as specified and shown on the drawings. Excavation shall be performed to the lines and grades indicated on the drawings. Dispose of excavated materials that are considered unsuitable for backfill, and surplus of excavated material, which is not required for backfill, all to the satisfaction of the Engineer.

B. COINCIDENTAL DAMAGE

Repair streets, sidewalks, drives, paving, walls, finishes, and other facilities damaged in the course of this Work. Repair materials shall match existing construction. [Repair materials shall generally match existing construction.] Repair work shall meet all requirements of the Owner, local authorities having jurisdiction, and meet the satisfaction of the Architect. Repair work shall be thoroughly first class. [Conform to requirements of Division 02 of this specifications.]

C. CUTTING AND PATCHING

Conform to the requirements in Division 01. Cut walls, floors, ceilings, and other portions of the facility as required to install work under this division. Obtain permission of the Architect prior to cutting. Do not cut or disturb structural members without prior approval from the Architect. Cut holes as small as possible. Patch walls, floors, and other portions of the facility as required by work under this division. Patching shall match the original material and construction including fire ratings, if applicable. Repair and refinish areas disturbed by work to the condition of adjoining surfaces in a manner satisfactory to the Architect.

D. ROUGH-IN

Coordinate without delay all roughing-in with other divisions. Conceal all conduit and raceways except in unfinished areas and where otherwise indicated on the drawings.

E. CONCRETE BASES

Provide concrete bases (e.g., housekeeping pads) for equipment where indicated on the drawings and as specified herein. Concrete bases shall have chamfered edges. Size of base shall be a minimum of 4 inches greater than the footprint of the equipment that it is supporting and shall have a minimum height of 3-1/2 inches

Construct equipment bases of a minimum 28-day, 4000-psi concrete conforming to American Concrete Institute Standard Building Code for Reinforced Concrete (ACI 318) and the latest applicable recommendations of the ACI standard practice manual. Concrete shall be composed of cement conforming to ASTM C 150 Type I, aggregate conforming to ASTM C33, and potable water. Exposed exterior concrete shall contain 5 to 7 percent air entrainment.

Unless otherwise specified or shown on the structural drawings, reinforce equipment bases with No. 4 reinforcing bars conforming to ASTM A615 or 6x6 - W2.9 x W2.9 welded wire mesh conforming to ASTM A185. Place reinforcing bars 24 inches on center with a minimum of two bars each direction.

Provide galvanized anchor bolts for equipment placed on concrete bases or on concrete slabs. Anchor bolts size, number, and placement shall be as recommended by the manufacturer of the equipment. F. SUPPORT SYSTEMS

Steel Slotted Support Systems (Slotted Channel): Comply with MFMA-3, factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch.

1. Stainless Steel: Type 304, per ASTM A240.

Aluminum Slotted Support Systems (Slotted Channel): Comply with MFMA-3, Type 6063-T6, per ASTM B221; factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch. Manufacturers: Cooper B-Line, ERICO International, Hilti, Power-Strut, Thomas and Betts, or Unistrut.

Field Fabrication:

Where field cutting of standard lengths of channel are required, make cuts straight and perpendicular to manufactured surfaces For field-cut or damaged surfaces of coated channels, dress cut ends, damaged surfaces, or both, with

an abrasive material (e.g., file, grinding stone, or similar) and cleanser to remove oils, rust, sharp edges, and shards. For channel with a factory-applied coating, re-finish cut edges with a coating compatible with the factory

finish and as recommended by the manufacturer (e.g., manufacturer's touch-up paint or zinc-rich cold-galvanizing compound, as applicable).

G. EQUIPMENT FURNISHED BY OTHERS

Provide necessary equipment and accessories that are not provided by the equipment supplier or Owner to complete installation of equipment furnished by others in locations as indicated on the drawings. specified herein, or both. Equipment and accessories not provided by the equipment supplier may include, but not be limited to, flexible cords and plugs as required for proper operation of the complete system, in accordance with the manufacturers' instructions.

Contractor shall be responsible for correct rough-in dimensions, and verify them with Architect and/or equipment supplier prior to rough-in and service installations.

H. SYSTEM TESTING AND ADJUSTING

Adjust, align, and test all electrical equipment on this project provided under this division and all electrical equipment furnished by others for installation or wiring under this division for proper operation

Test all systems and equipment according to the requirements in NETA ATS (latest edition) and all additional requirements specified in following sections.

Maintain the following on the project premises at all times: a true RMS reading voltmeter, a true RMS reading ammeter, and a megohmmeter insulation resistance tester. Provide test data readings as requested or as required by the Engineer.

I. EQUIPMENT IDENTIFICATION

Provide equipment identification nameplates on all electrical equipment enclosures, transformers, disconnect switches.

Engraved, contrasting color, three-layer, laminated plastic, indicating the name of the equipment, load, or circuit as designated on the drawings and in the specifications:

Attachment method shall be acceptable to the manufacturers of the equipment to which the nameplates are being applied.

Nameplate Color:

Black background with white letters for Normal Power; Letter height: 3/8-inch minimum .

J. SYSTEM START UP

Perform the following prior to starting up the electrical systems:

Check all components and devices and lubricate items accordingly. Tighten screws and bolts for connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B Adjust taps on each transformer for rated secondary voltage when the transformer is at minimum

4. Check and record building's service entrance voltage, grounding conditions, grounding resistance, and proper phasing.

5. Replace all burned-out lamps and lamps used for temporary construction lighting in permanent light fixtures After all systems have been inspected and adjusted, confirm all operating features required by the drawings and specifications and make final adjustments as necessary.

END OF SECTION 26

Division 26: BASIC ELECTRICAL MATERIALS AND METHODS 1. RACEWAYS

A. NON-METALLIC CONDUIT AND TUBING

Rigid Nonmetallic Conduit (RNC): Schedule 40 PVC, 90 deg C rated, NEMA TC-2, UL 651

Fittings: NEMA TC 3, TC 6; UL 651, compatible with conduit/tubing type and material, NRTL listed. Manufacturers: AFC Cable, American International, Anamet Electrical, Amco, Cantex, Certainteed, Condux International, Elecsys, Electri-Flex, Lamson and Sessions, Manhattan/CDT/Cole-Flex, Prime Conduit, Raco, Spiralduct, Superflex Ltd, or Thomas and Betts.

2. RACEWAY INSTALLATION

A. GENERAL RACEWAY INSTALLATION REQUIREMENTS

Install raceways parallel and perpendicular to building lines.

Install raceways to requirements of structure, to requirements of all other work on the project, and to clear all openings, depressions, pipes, ducts, reinforcing steel, and other immovable obstacles Install raceways set in forms for concrete structure in such a manner that installation will not affect the strength of the structure.

Except where approved in writing by the Engineer, install no raceway in a slab-on-grade. Locate raceway below granular fill below slabs-on-grade.

Install raceways continuous between connections to outlets, boxes, and cabinets with a minimum possible number of bends and not more than the equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- and 90-degree bends, unless approved by the Engineer in advance. Make other bends smooth and even and without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible and never shorter than the corresponding trade elbow.

Use long radius elbows for all underground installations, where necessary, or where otherwise indicated.

Securely fasten raceways in place with approved straps, hangers, and steel supports as required. Attach raceway supports to the building structure. Hang single raceways for feeders with malleable split ring hangers with rod and turnbuckle suspension from inserts spaced not over 10 feet apart in construction above. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of the bends. Do not support raceways from suspended ceiling components.

Ream raceway ends, thoroughly clean raceways before installation, and keep clean after installation. Plug or cover openings and boxes as required to keep raceways clean during construction and fish all raceways clear of obstructions before pulling conductor wires. Provide raceways of ample size for pulling of wire, not smaller than code requirements and not less than 1/2-inch in size, unless indicated otherwise on Drawings. Homeruns containing more than one branch circuit shall not be less than 3/4-inch in size.

Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet Engineer's approval without additional cost to the Owner. Align and install true and plumb all raceway terminations at panelboards, switchboards, motor control

Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints, and when using RNC or RAC in exposed environments in accordance with

Install a pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 24 inches of slack at each end of pull wire.

Make all joints and connections in a manner that will ensure mechanical strength and electrical continuity. B. ABOVE GROUND RACEWAY USE:

Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. Provide GRS for all conduits exposed to weather or other hazardous conditions.

Unless noted otherwise, all other raceway may be EMT where approved by local code. Use compression type fittings for EMT, with all fittings NRTL listed for the environment in which they are used. Unless noted otherwise, set-screw type fittings are not allowed.

C. UNDERGROUND RACEWAY USE:

NFPA 70 and expansion/contraction properties of RNC or RAC.

equipment, and junction boxes

Provide GRS installed below grade with a corrosion-resistant bonded-plastic or approved mastic coating This shall include the 90-degree elbow below grade and the entire vertical transition to above grade.

RNC conduit may be used underground where permitted by local code and where not specifically restricted by these documents. When used, provide plastic-coated GRS, as specified above, for all bends greater than 30 degrees, including the 90-degree elbows below grade and the entire vertical risers for transitions from below to above grade or above slab.

D. EQUIPMENT CONNECTIONS

Use FMC for final connection to each motor, transformer, and any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors, or sunlightProvide all FMC and LFMC with an insulated bonding conductor.

3. BUSHINGS AND LOCKNUTS

Rigidly terminate conduits entering sheet metal enclosures to the enclosure with a bushing and locknut on the inside and a locknut or an approved hub on the outside. Conduit shall enter the enclosure squarely. Provide bushings and locknuts made of galvanized malleable iron with sharp, clean-cut threads.

Where EMT enters a box, provide approved EMT compression connectors.

Use insulated, grounding, or combination bushings wherever connection is subject to vibration or moisture, when required by NFPA 70

4. CONDUCTORS AND CABLES

Annealed (soft) copper complying with ICEA S-95-658/NEMA WC70 and UL standards 44 or 83 as applicable.

Conductor Insulation Types: 90-degree C-rated, Type THHN/THWN-2 or XHHW-2 complying with ICEA S-95-658/NEMA WC70.

Sizes of conductors and cables indicated or specified are in American Wire Gage (AWG - Brown and Sharpe).

All feeder and branch circuit conductors No. 8 AWG and larger: Stranded.

All conductors, No. 10 AWG and smaller: Solid copper.

All Branch Circuit Wiring: Not smaller than No. 12 AWG. If no conductor size is indicated on the Drawings for a branch circuit, provide conductors and conduit sized per NFPA 70 and based on the indicated branch circuit overcurrent protective device (OCPD) rating and number of poles. Where no circuit size (i.e., conductors and OCPD) is indicated on the drawings for a branch circuit, provide three No. 12 AWG conductors, in 3/4-inch raceway, and a 20A circuit breaker

Control Wiring: Stranded copper conductors, 600V insulation, of the proper type, size, and number as required to accomplish specified function. Minimum size: No. 14 AWG, unless noted otherwise.

Flexible Cords and Cables: Stranded copper conductors for all, unless noted otherwise.

Special Purpose Conductors And Cables, Such As Low Voltage Control And Shielded Instrument Wiring: As recommended by the system equipment manufacturer unless indicated otherwise.

Copper Conductor Manufacturers: Advance Wire and Cable, AFC Cable, Alan Wire, Alflex, American Insulated Wire, Encore Wire, Northern Cables, Okonite, or Southwire.

Connections: Apply a zinc based anti_oxidizing compound to connections. Do not use terminals on wiring devices to feed through to the next device.

5. CONDUCTORS AND CABLES INSTALLATION

manufacturer's recommendations, using the manufacturer's recommended tools.

Install all wiring in approved raceway and enclosures, except where specified or indicated for low-voltage wiring, where specified or indicated for direct-buried cables, or where type MC cable is indicated or specified as acceptable.

Install all conductors and cables in raceways continuous without taps or splices. Splice or tap only in approved boxes and enclosures with approved solderless connectors, or crimp connectors and terminal blocks for control wiring, and keep to the minimum required. Insulate all splices, taps, and joints as required

All materials used to terminate, splice, or tap conductors: designed for, properly sized for, and NRTL listed for the specific application and conductors involved, and installed in strict accordance with the

Where wiring is indicated as installed, but the connection is indicated "FUTURE" or "BY OTHER DIVISION, TRADES, OR CONTRACTS", leave a minimum 3-foot "Pigtail" at the box, tape the ends of the conductors,

and cover the box. In general, the direction of branch circuit "home run" routing is indicated on the drawings, complete with

circuit numbers and panelboard designation. Continue all such "home run" wiring to the designated panelboard, as though "circuit runs" were indicated in their entirety.

Common or shared neutrals are not allowed unless shown on the drawings to be used or specifically noted to be allowed Where multi-wire branch circuits (i.e., shared neutral) are allowed, they shall be provided with a means that Multi-pole breakers or 3 single-pole breakers with a handle tie are two examples.

restrictions apply, which are in addition to those in NFPA: Normal or Non-Essential circuits:

1. Maximum of 16 conductors in a single raceway. For up to eight conductors in a raceway, minimum raceway size: 3/4-inch. For greater than eight conductors, minimum raceway size: 1-inch. Do not install any other type of circuit in this raceway

3. Only 15A and 20A branch circuit homeruns may be combined into one raceway. Properly identify all terminal blocks and wire terminals for control wiring with vinyl stick-on markers or equivalent. Provide Engineer with a list of proposed identifying numbers for review prior to installing

larger on the drawings.

appropriate color around each conductor at all termination points, junctions, and pull boxes.

System Voltage:

480V and 480Y/277V

WIREWAYS

Phase A: Brown

Phase B: Orange

Equipment ground: green

Phase C: Yellow

7. GROUNDING

B. LIGHT FIXTURES

C. LAMPS

E. PHOTO CONTROL

The photo control shall:

striking the photocell.

specified light levels.

END OF SECTION 26

A. GROUNDING

Drawings.

Neutral: Gray

will simultaneously disconnect all ungrounded conductors at the point the branch circuit originates

When multiple home runs are combined into a single raceway such that the number of conductors exceeds four (conductor count is made up of any combination of phase and neutral conductors), the following

2. Minimum wire size for all conductors in this raceway: No. 10 AWG.

Provide an equipment-grounding conductor or bonding jumper, as applicable, in all feeders and branch circuits, sized in accordance with NFPA 70 Tables 250.66 or 250.122, as applicable, unless indicated as

Voltage drop in branch circuits shall not exceed 3 percent.

Wiring shall have insulation of the proper color to match color code system in the table below unless there is a color system currently in use by the facility, in which case the colors are to match the existing system. In larger sizes where properly colored insulation is not available, use vinyl plastic electrical tape of the

6. JUNCTION BOXES, PULL BOXES, CABINETS, AND

Provide junction boxes, pull boxes, cabinets, and wireways wherever necessary for proper installation of various electrical systems according to NFPA 70 and where indicated on the drawings. Size as required for the specific function or as required by NFPA 70, whichever is larger. Construction shall be of a NEMA design suitable for the environment installed

Permanently and effectively ground and bond the electrical installation in a thorough and efficient manner, and in conformance, at a minimum, with NFPA 70, or these documents, where they exceed code requirements. Use bare or insulated conductors as specified herein, and other materials indicated on the

8. LIGHT FIXTURES, LAMPS AND BALLASTS

A. LIGHT FIXTURE LOCATIONS

Light fixtures shown on the drawings represent general arrangements only. Coordinate location with all other trades before installation to avoid conflicts.

Provide light fixtures as scheduled on drawings, including all necessary accessories, material and labor to nake light fixtures completely ready for use. Light fixture model numbers scheduled on the drawings show only the manufacturer, grade, and style of light fixtures required. Provide all hangers, supports, and miscellaneous hardware required to install light fixtures, proper trim to fit each ceiling condition actually encountered, and additional tie wires connected to structure to conform to seismic requirements where required by the applicable building code.

Packaging of light fixtures will be allowed. Only those luminaires listed in the Light Fixture Schedule or approved in accordance with substitutions of these specifications will be accepted. Where the Light Fixture Schedule indicates an allowance for a specific light fixture, the price is a Contractor price. Include all additional costs for freight, lamps, and installation of light fixture and lamps.

Refer to lighting consultant specifications and light fixture schedule for all lamp requirements.

Provide lamps and color temperatures as indicated on the drawings for all light fixtures.. Lamps shall be by the same manufacturer for color consistency. Lamps shall be compatible with the specified light fixture. LED Lamps and Luminaires: Comply with ANSI C78.377 for white light LED color range; minimum CRI of 80 unless noted otherwise; LED binning specification tolerance to be within 3 macadam ellipses of rated values: all LEDs used for same fixture type throughout the project must originate from the same production bin: minimum average rated life of 20,000 hours for LED lamps and 50,000 hours for LED luminaires; Rohs compliant. LED lamp manufacturers: Bridgelux, Cree, Nichia, Osram, or Xicato.

D. EXTERIOR AREA LIGHTING

Provide all components of the outdoor lighting system, including pole assemblies as detailed on the drawings and described below. All material furnished shall be of the best quality and workmanship, and the manufacturer may be required to furnish satisfactory evidence of the ability to supply the material in accordance with the drawings and specifications.

Poles and light fixtures shall be as noted on the drawings. If Contractor desires to substitute other than the specified manufacturer(s), refer to Article "Substitutions" in this division, for requirements. No alternate manufacturers will be considered for approval without this prior submittal.

Furnish all poles with hand holes and no less than four high-strength steel anchor bolts for pole mounting. Each anchor bolt shall be threaded at the top, fitted with hexagon nuts, and shall have an "L" bend on the bottom of the bolt. All anchor bolts and nuts shall be hot-dip galvanized. All other small hardware required (bolts, nuts, washers, shims, etc.) shall be galvanized. Provide pole finishes as noted on the drawings.

Provide automatic switching (or dimming, as specified) for lighting loads using a thermal design with built_in delay to ensure that the controlled lighting does not switch off due to ambient light or lightning

Have a rating based on NRTL testing at 50 percent power factor for ballast loads, be NRTL listed, and meet all applicable agency requirements

Be stem-mounting type with all necessary mounting hardware and instructions; have a housing constructed of high impact poly-carbonate; photo control components consisting of a metal film resistor, dual temperature compensating bi_metal blades, snap action contact blades, chemically treated/polymer encapsulated cadmium sulfide photocell, and silver alloy contacts to ensure reliable 5 year manufacturer warranted operation. Photo control shall be 100 percent factory tested for function within manufacturer's

Be from the same manufacturer of and totally compatible with the time switches specified above.

HENDERSON 1801 MAIN STREET, SUITE 300

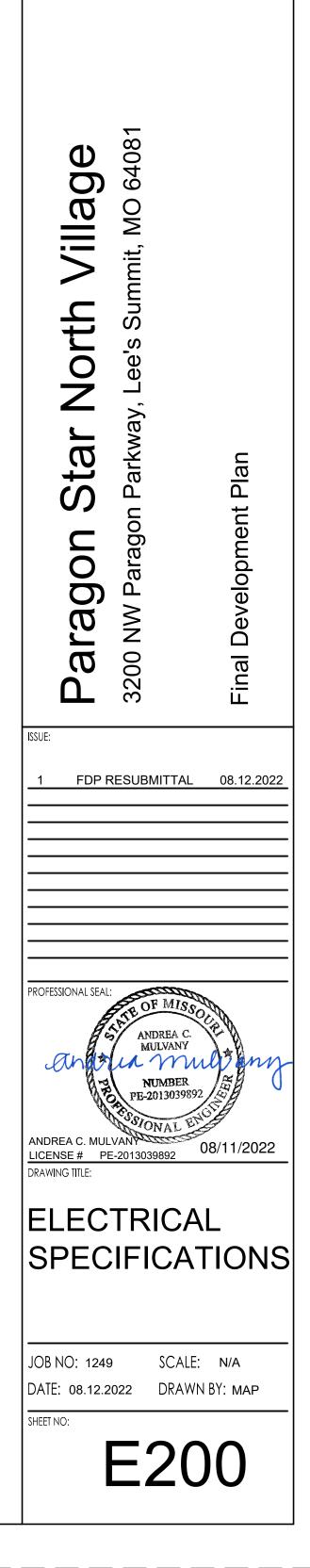
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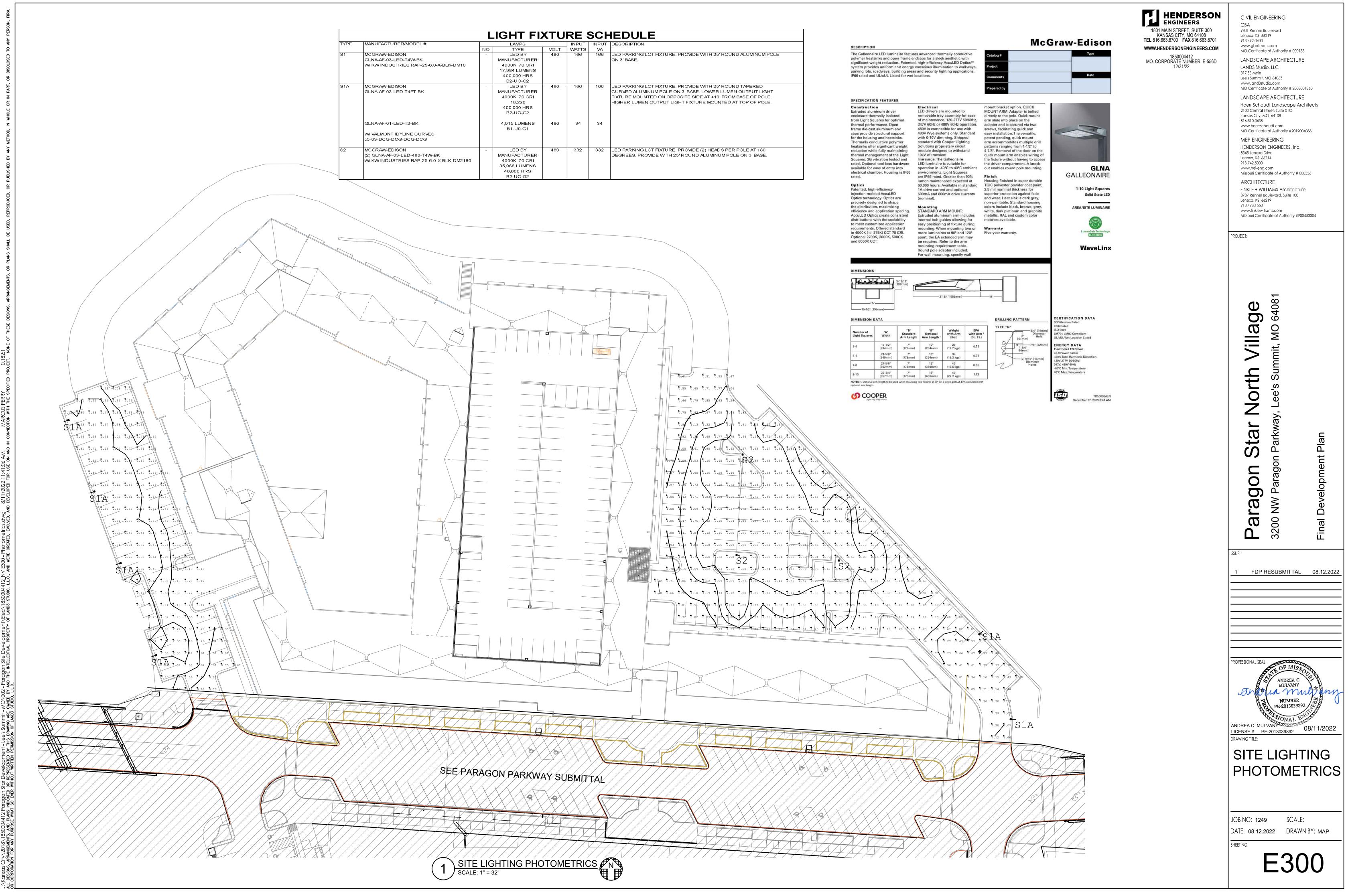
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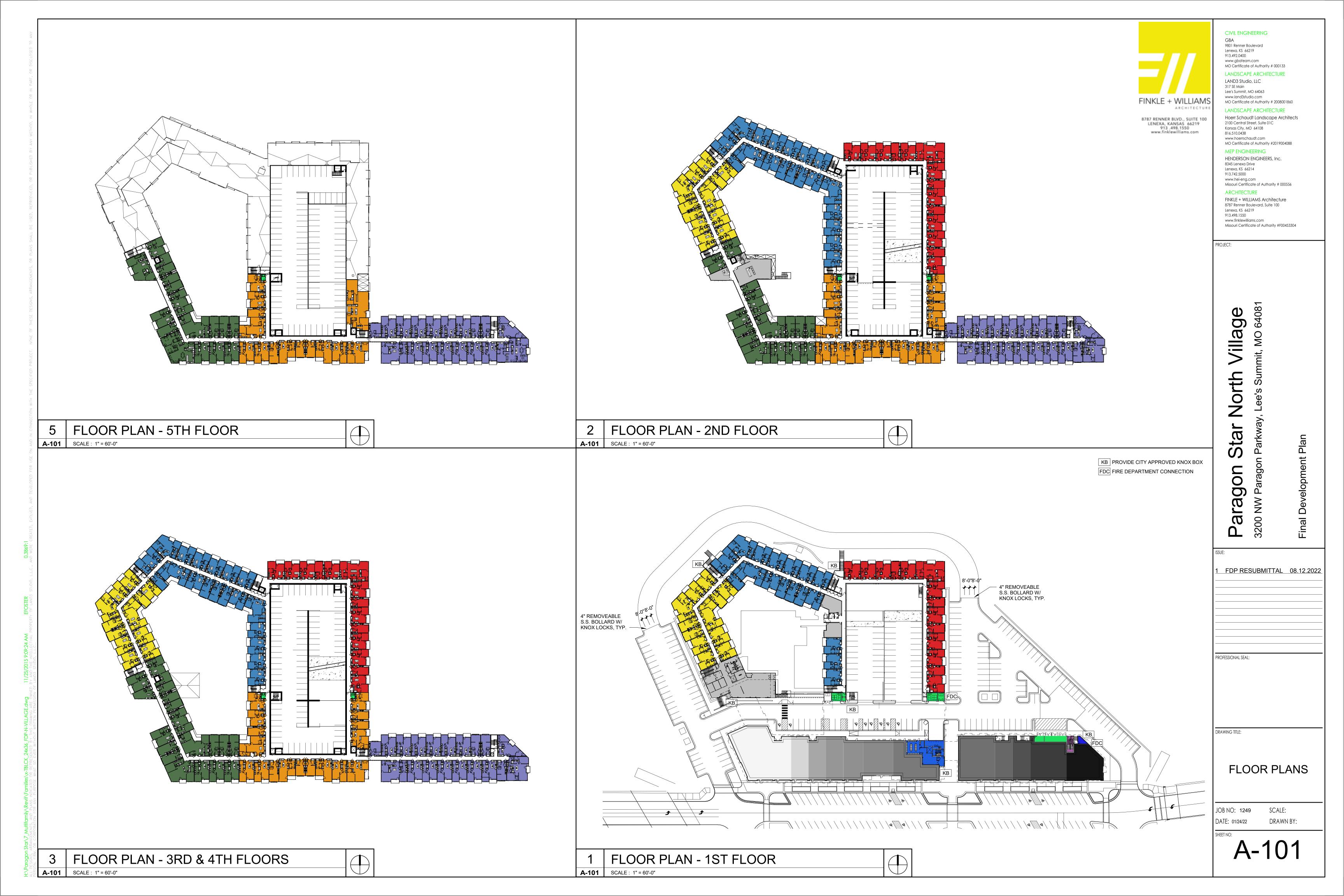
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PROJECT:









	<u>CS-2</u>
ST-1 STU-1 CS-3 CS-4 WINDOW-1, TYP. RALING-1,	VINDOW-1, TYP. STU-1
CS-1, TYP. AT BALCONY	$\begin{array}{c} \begin{array}{c} \begin{array}{c} 1 \\ \hline 0 \\ 146 \\ -4 \\ 7/8 \\ \hline \\ 146 \\ -4 \\ 7/8 \\ \hline \\ \hline \\ 137 \\ -3 \\ 3/4 \\ \hline \\ \hline \\ 137 \\ -3 \\ 3/4 \\ \hline \\ \hline \\ 137 \\ -3 \\ 3/4 \\ \hline \\ \hline \\ \hline \\ 137 \\ -3 \\ 3/4 \\ \hline \\ \hline \\ \hline \\ \hline \\ 137 \\ -3 \\ 3/4 \\ \hline \\ $
RALING-1.TP. 50- 50- 50- 50- 50- 50- 50- 50-	STU-1

