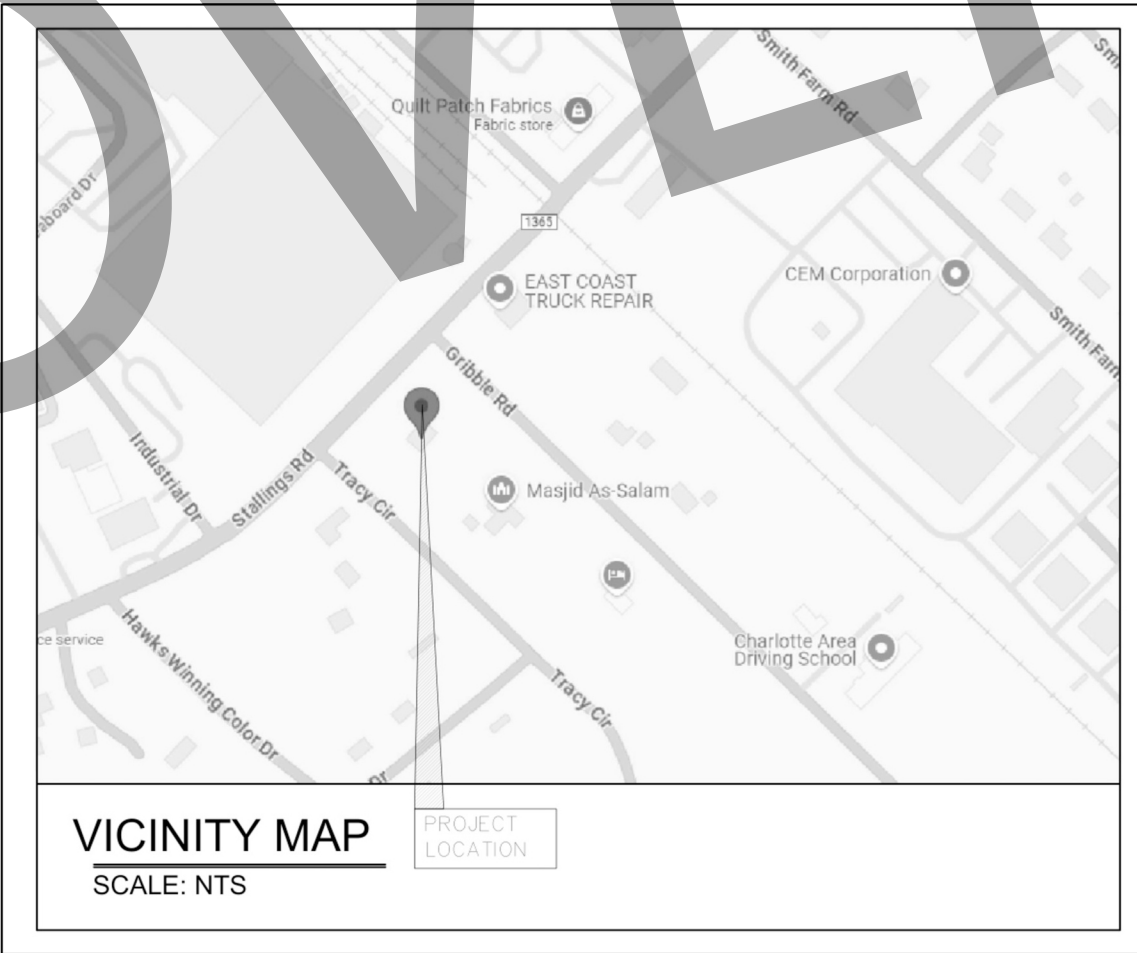


PROPOSED CIVIL DESIGN CONSTRUCTION PLANS
TO SERVE

JLN SPORTS AND GAMES LLC

824 STALLINGS ROAD
STALLINGS, NC 28104

OCTOBER 2024



INDEX OF DRAWINGS	SHEET NO.
COVER SHEET	C0
TOPOGRAPHIC SURVEY	
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CONSTRUCTION DETAILS – TRUE GRID GRAVEL FILL INSTALLATION	C8

REVISIONS

JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

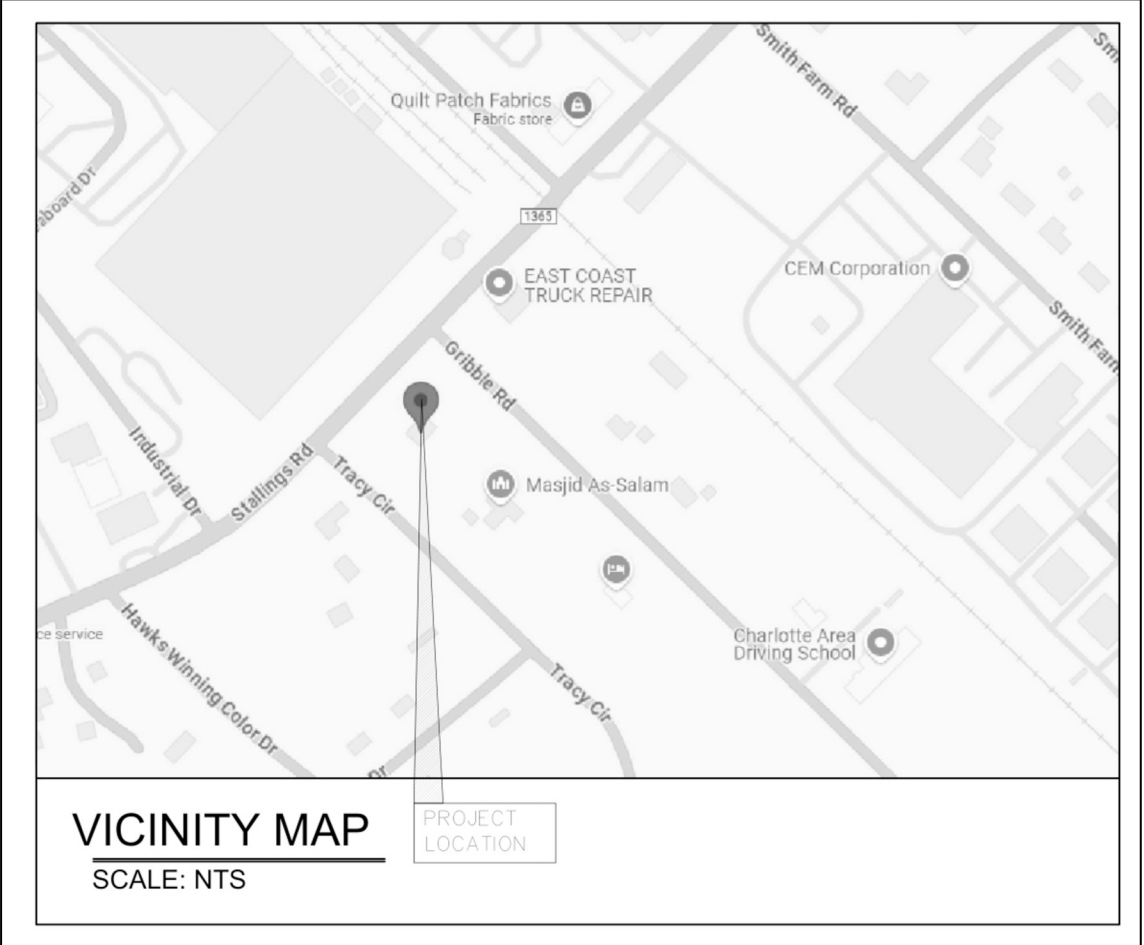
COVER
SHEET

DATE:
DWG SCALE:
PROJECT NO:
APPROVED BY:

DRAWN BY:
CHECKED BY:

DRAWING NO.:

Co



PROJECT DATA	
OWNER	JLN SPORTS AND GAMES LLC
OWNER ADDRESS	1501 WAYBRIDGE WAY, WEDDINGTON, NC 28104
CIVIL ENGINEER	MARC GODZINA
CIVIL ENGINEER ADDRESS	237 TOWERING PINE DR. LADSON, SC 29456
CIVIL ENGINEER PHONE	734-552-0016
CIVIL ENGINEER EMAIL	marcitect83@yahoo.com
SITE ADDRESS	824 STALLINGS ROAD, STALLINGS, NC 28104
PARCEL ID	07129329
TOTAL SITE AREA	1.41 ACRES (EXCLUDING EASEMENTS)
CURRENT ZONING	INDUSTRIAL
EXISTING USE	RESIDENTIAL
PROPOSES USE	INDOOR SPORTS / RECREATIONAL CLUB
BUILDING TYPE	HIGHWAY LOT
PROPOSED BUILDING GROSS FLOOR AREA	20,820 SF
PROPOSED BUILDING HEIGHT	2-STORY (50 FEET TALL)
BUILDING SETBACK	ALONG STALLINGS ROAD 24 FT ALONG GRIBBLE ROAD 12 FT ALONG TRACY CIRCLE 12 FT PARKING BUFFER FROM REAR OF PROPERTY 12 FT
FLOOD ZONES	NONE
STREAM / WETLANDS	NONE
PROPOSED PARKING	66 REGULAR SPACES + 2 HANDICAPPED SPACES + 5 BICYCLE SPACES
PARKING SPACE DIMENSION	9 FEET X 20 FEET
PARKING LOT SURFACE	PERMEABLE GRAVEL WITH BASE LAYER GRAVEL USED FOR WATER STORAGE
PROPOSED IMPERVIOUS AREA	22,941 SF
PROPOSED PARKING AREA (PERMEABLE)	25,100 SF
PROPOSED LANDSCAPE AREA	13,392 SF

REVISIONS

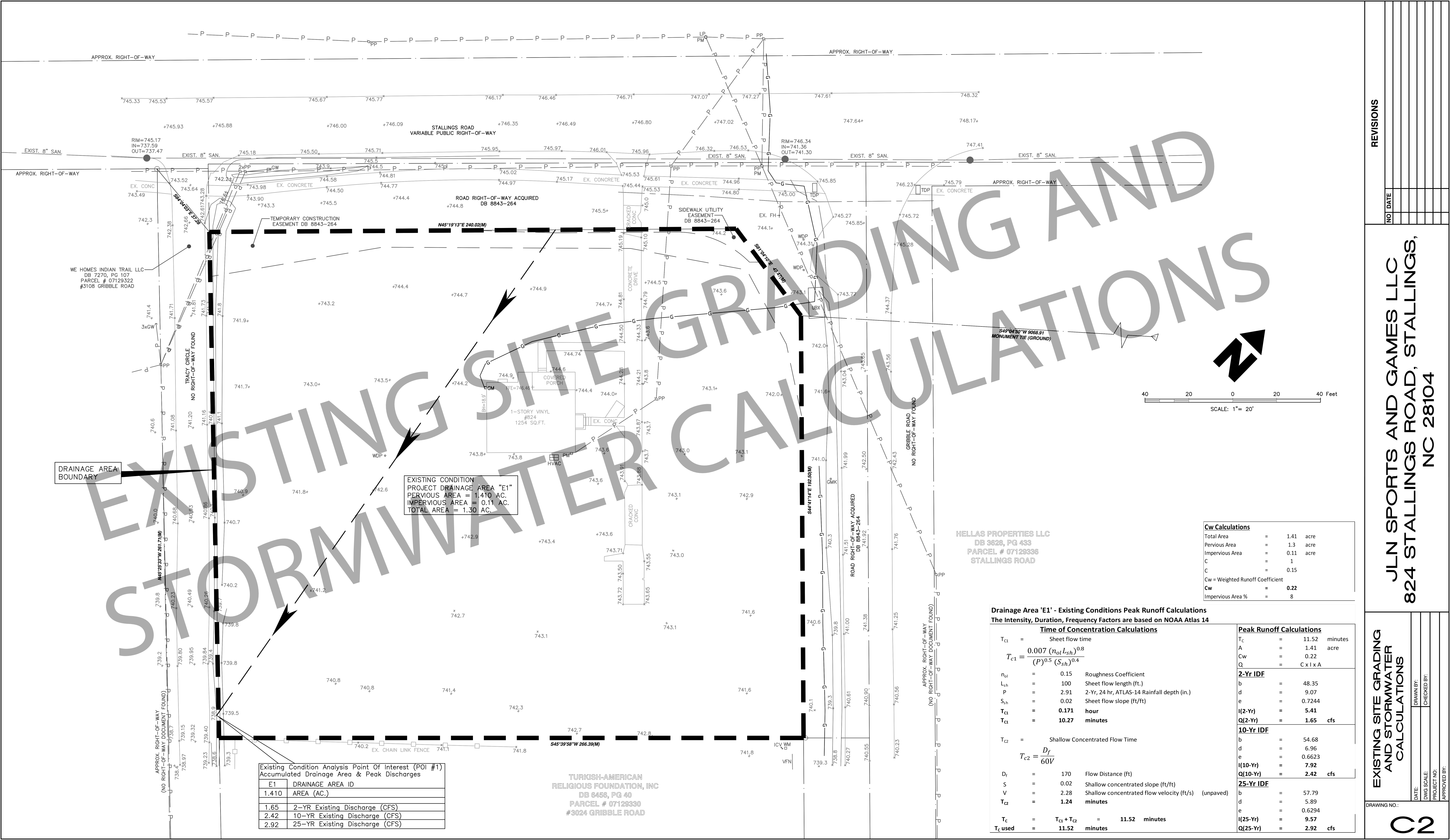
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JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

PROPOSED SITE DIMENSION AND LANDSCAPE PLAN

DRAWING NO.:

1



DRAINAGE AREA
BOUNDARY

EXISTING CONDITION
PROJECT DRAINAGE AREA "E1"
PERVIOUS AREA = 1.410 AC.
IMPERVIOUS AREA = 0.11 AC.
TOTAL AREA = 1.30 AC.

Existing Condition Analysis Point Of Interest (POI #1) Accumulated Drainage Area & Peak Discharges	
E1	DRAINAGE AREA ID
1.410	AREA (AC.)
1.65	2-YR Existing Discharge (CFS)
2.42	10-YR Existing Discharge (CFS)
2.92	25-YR Existing Discharge (CFS)

TURKISH-AMERICAN
RELIGIOUS FOUNDATION, INC
DB 6456, PG 40
PARCEL # 07129330
#3024 GRIBBLE ROAD

HELLAS PROPERTIES LLC
DB 3628, PG 433
PARCEL # 07129336
STALLINGS ROAD

Cw Calculations	
Total Area	= 1.41 acre
Pervious Area	= 1.3 acre
Impervious Area	= 0.11 acre
C	= 1
Cw = Weighted Runoff Coefficient	= 0.15
Cw	= 0.22
Impervious Area %	= 8

Drainage Area 'E1' - Existing Conditions Peak Runoff Calculations
The Intensity, Duration, Frequency Factors are based on NOAA Atlas 14

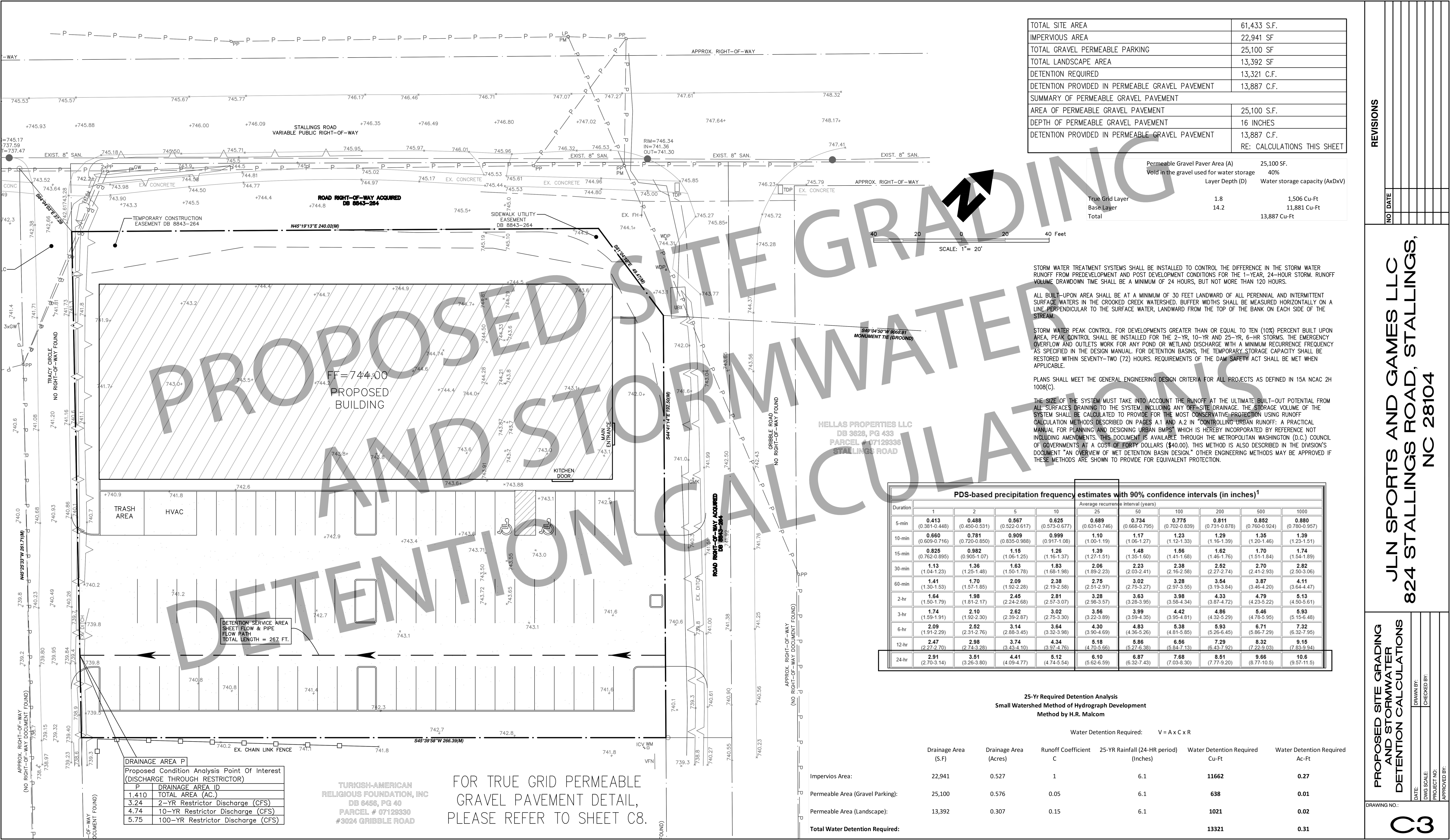
Time of Concentration Calculations		Peak Runoff Calculations	
T_{c1}	= Sheet flow time	T_c	= 11.52 minutes
$T_{c1} = \frac{0.007 (n_{ol} L_{sh})^{0.8}}{(P)^{0.5} (S_{sh})^{0.4}}$		A	= 1.41 acre
n_{ol}	= 0.15 Roughness Coefficient	Cw	= 0.22
L_{sh}	= 100 Sheet flow length (ft.)	Q	= C x I x A
P	= 2.91 2-Yr, 24 hr, ATLAS-14 Rainfall depth (in.)	2-Yr IDF	
S_{sh}	= 0.02 Sheet flow slope (ft/ft)	b	= 48.35
T_{c1}	= 0.171 hour	d	= 9.07
T_{c1}	= 10.27 minutes	e	= 0.7244
T_{c2}	= Shallow Concentrated Flow Time	I(2-Yr)	= 5.41
$T_{c2} = \frac{D_f}{60V}$		Q(2-Yr)	= 1.65 cfs
D_f	= 170 Flow Distance (ft)	10-Yr IDF	
S	= 0.02 Shallow concentrated slope (ft/ft)	b	= 54.68
V	= 2.28 Shallow concentrated flow velocity (ft/s) (unpaved)	d	= 6.96
T_{c2}	= 1.24 minutes	e	= 0.6623
T_c	= $T_{c1} + T_{c2}$ = 11.52 minutes	I(10-Yr)	= 7.92
$T_{c \text{ used}}$	= 11.52 minutes	Q(10-Yr)	= 2.42 cfs
		25-Yr IDF	
		b	= 57.79
		d	= 5.89
		e	= 0.6294
		I(25-Yr)	= 9.57
		Q(25-Yr)	= 2.92 cfs

REVISIONS

JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

EXISTING SITE GRADING
AND STORMWATER
CALCULATIONS

DRAWING NO.: C2



TOTAL SITE AREA	61,433 S.F.
IMPERVIOUS AREA	22,941 SF
TOTAL GRAVEL PERMEABLE PARKING	25,100 SF
TOTAL LANDSCAPE AREA	13,392 SF
DETENTION REQUIRED	13,321 C.F.
DETENTION PROVIDED IN PERMEABLE GRAVEL PAVEMENT	13,887 C.F.
SUMMARY OF PERMEABLE GRAVEL PAVEMENT	
AREA OF PERMEABLE GRAVEL PAVEMENT	25,100 S.F.
DEPTH OF PERMEABLE GRAVEL PAVEMENT	16 INCHES
DETENTION PROVIDED IN PERMEABLE GRAVEL PAVEMENT	13,887 C.F.
RE: CALCULATIONS THIS SHEET	

Permeable Gravel Paver Area (A)	25,100 SF.	
Void in the gravel used for water storage	40%	
Layer Depth (D)	Water storage capacity (AxDxV)	
True Grid Layer	1.8	1,506 Cu-Ft
Base Layer	14.2	11,881 Cu-Ft
Total		13,887 Cu-Ft

STORM WATER TREATMENT SYSTEMS SHALL BE INSTALLED TO CONTROL THE DIFFERENCE IN THE STORM WATER RUNOFF FROM PREDEVELOPMENT AND POST DEVELOPMENT CONDITIONS FOR THE 1-YEAR, 24-HOUR STORM. RUNOFF VOLUME DRAWDOWN TIME SHALL BE A MINIMUM OF 24 HOURS, BUT NOT MORE THAN 120 HOURS.

ALL BUILT-UPON AREA SHALL BE AT A MINIMUM OF 30 FEET LANDWARD OF ALL PERENNIAL AND INTERMITTENT SURFACE WATERS IN THE CROOKED CREEK WATERSHED. BUFFER WIDTHS SHALL BE MEASURED HORIZONTALLY ON A LINE PERPENDICULAR TO THE SURFACE WATER, LANDWARD FROM THE TOP OF THE BANK ON EACH SIDE OF THE STREAM.

STORM WATER PEAK CONTROL. FOR DEVELOPMENTS GREATER THAN OR EQUAL TO TEN (10%) PERCENT BUILT UPON AREA, PEAK CONTROL SHALL BE INSTALLED FOR THE 2-YR, 10-YR AND 25-YR, 6-HR STORMS. THE EMERGENCY OVERFLOW AND OUTLETS WORK FOR ANY POND OR WETLAND DISCHARGE WITH A MINIMUM RECURRENCE FREQUENCY AS SPECIFIED IN THE DESIGN MANUAL. FOR DETENTION BASINS, THE TEMPORARY STORAGE CAPACITY SHALL BE RESTORED WITHIN SEVENTY-TWO (72) HOURS. REQUIREMENTS OF THE DAM SAFETY ACT SHALL BE MET WHEN APPLICABLE.

PLANS SHALL MEET THE GENERAL ENGINEERING DESIGN CRITERIA FOR ALL PROJECTS AS DEFINED IN 15A NCAC 2H 1008(C).

THE SIZE OF THE SYSTEM MUST TAKE INTO ACCOUNT THE RUNOFF AT THE ULTIMATE BUILT-OUT POTENTIAL FROM ALL SURFACES DRAINING TO THE SYSTEM, INCLUDING ANY OFF-SITE DRAINAGE. THE STORAGE VOLUME OF THE SYSTEM SHALL BE CALCULATED TO PROVIDE FOR THE MOST CONSERVATIVE PROTECTION USING RUNOFF CALCULATION METHODS DESCRIBED ON PAGES A.1 AND A.2 IN "CONTROLLING URBAN RUNOFF: A PRACTICAL MANUAL FOR PLANNING AND DESIGNING URBAN BMPs" WHICH IS HEREBY INCORPORATED BY REFERENCE NOT INCLUDING AMENDMENTS. THIS DOCUMENT IS AVAILABLE THROUGH THE METROPOLITAN WASHINGTON (D.C.) COUNCIL OF GOVERNMENTS AT A COST OF FORTY DOLLARS (\$40.00). THIS METHOD IS ALSO DESCRIBED IN THE DIVISION'S DOCUMENT "AN OVERVIEW OF WET DETENTION BASIN DESIGN." OTHER ENGINEERING METHODS MAY BE APPROVED IF THESE METHODS ARE SHOWN TO PROVIDE FOR EQUIVALENT PROTECTION.

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.413 (0.381-0.448)	0.488 (0.450-0.531)	0.567 (0.522-0.617)	0.625 (0.573-0.677)	0.689 (0.631-0.746)	0.734 (0.668-0.795)	0.775 (0.702-0.839)	0.811 (0.731-0.878)	0.852 (0.760-0.924)	0.880 (0.780-0.957)
10-min	0.660 (0.609-0.716)	0.781 (0.720-0.850)	0.909 (0.835-0.988)	0.999 (0.917-1.08)	1.10 (1.00-1.19)	1.17 (1.06-1.27)	1.23 (1.12-1.33)	1.29 (1.16-1.39)	1.35 (1.20-1.46)	1.39 (1.23-1.51)
15-min	0.825 (0.762-0.895)	0.982 (0.905-1.07)	1.15 (1.06-1.25)	1.26 (1.16-1.37)	1.39 (1.27-1.51)	1.48 (1.35-1.60)	1.56 (1.41-1.68)	1.62 (1.46-1.76)	1.70 (1.51-1.84)	1.74 (1.54-1.89)
30-min	1.13 (1.04-1.23)	1.36 (1.25-1.48)	1.63 (1.50-1.78)	1.83 (1.68-1.98)	2.06 (1.89-2.23)	2.23 (2.03-2.41)	2.38 (2.16-2.58)	2.52 (2.27-2.74)	2.70 (2.41-2.93)	2.82 (2.50-3.06)
60-min	1.41 (1.30-1.53)	1.70 (1.57-1.85)	2.09 (1.92-2.28)	2.38 (2.19-2.58)	2.75 (2.51-2.97)	3.02 (2.75-3.27)	3.28 (2.97-3.55)	3.54 (3.19-3.84)	3.87 (3.46-4.20)	4.11 (3.64-4.47)
2-hr	1.64 (1.50-1.79)	1.98 (1.81-2.17)	2.45 (2.24-2.68)	2.81 (2.57-3.07)	3.28 (2.98-3.57)	3.63 (3.28-3.95)	3.98 (3.58-4.34)	4.33 (3.87-4.72)	4.79 (4.23-5.22)	5.13 (4.50-5.61)
3-hr	1.74 (1.59-1.91)	2.10 (1.92-2.30)	2.62 (2.39-2.87)	3.02 (2.75-3.30)	3.56 (3.22-3.89)	3.99 (3.59-4.35)	4.42 (3.95-4.81)	4.86 (4.32-5.29)	5.46 (4.78-5.95)	5.93 (5.15-6.48)
6-hr	2.09 (1.91-2.29)	2.52 (2.31-2.76)	3.14 (2.88-3.45)	3.64 (3.32-3.98)	4.30 (3.90-4.69)	4.83 (4.36-5.26)	5.38 (4.81-5.85)	5.93 (5.26-6.45)	6.71 (5.86-7.29)	7.32 (6.32-7.95)
12-hr	2.47 (2.27-2.70)	2.98 (2.74-3.28)	3.74 (3.43-4.10)	4.34 (3.97-4.76)	5.12 (4.70-5.66)	5.86 (5.27-6.38)	6.56 (5.84-7.13)	7.29 (6.43-7.92)	8.32 (7.22-9.03)	9.15 (7.83-9.94)
24-hr	2.91 (2.70-3.14)	3.51 (3.26-3.80)	4.41 (4.09-4.77)	5.12 (4.74-5.54)	6.10 (5.62-6.59)	6.87 (6.32-7.43)	7.68 (7.03-8.30)	8.51 (7.77-9.20)	9.66 (8.77-10.5)	10.6 (9.57-11.5)

25-Yr Required Detention Analysis
Small Watershed Method of Hydrograph Development
Method by H.R. Malcom

Water Detention Required: V = A x C x R					
Drainage Area (S.F)	Drainage Area (Acres)	Runoff Coefficient C	25-YR Rainfall (24-HR period) (Inches)	Water Detention Required Cu-Ft	Water Detention Required Ac-Ft
Impervious Area:	22,941	0.527	6.1	11662	0.27
Permeable Area (Gravel Parking):	25,100	0.576	0.05	638	0.01
Permeable Area (Landscape):	13,392	0.307	0.15	1021	0.02
Total Water Detention Required:				13321	0.31

DRAINAGE AREA P	
Proposed Condition Analysis Point Of Interest (DISCHARGE THROUGH RESTRICTOR)	
P	DRAINAGE AREA ID
1.410	TOTAL AREA (AC.)
3.24	2-YR Restrictor Discharge (CFS)
4.74	10-YR Restrictor Discharge (CFS)
5.75	100-YR Restrictor Discharge (CFS)

TURKISH-AMERICAN
RELIGIOUS FOUNDATION, INC
DB 6458, PG 40
PARCEL # 07129330
#3024 GRIBBLE ROAD

FOR TRUE GRID PERMEABLE
GRAVEL PAVEMENT DETAIL,
PLEASE REFER TO SHEET C8.

REVISIONS

JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

PROPOSED SITE GRADING
AND STORMWATER
DETENTION CALCULATIONS

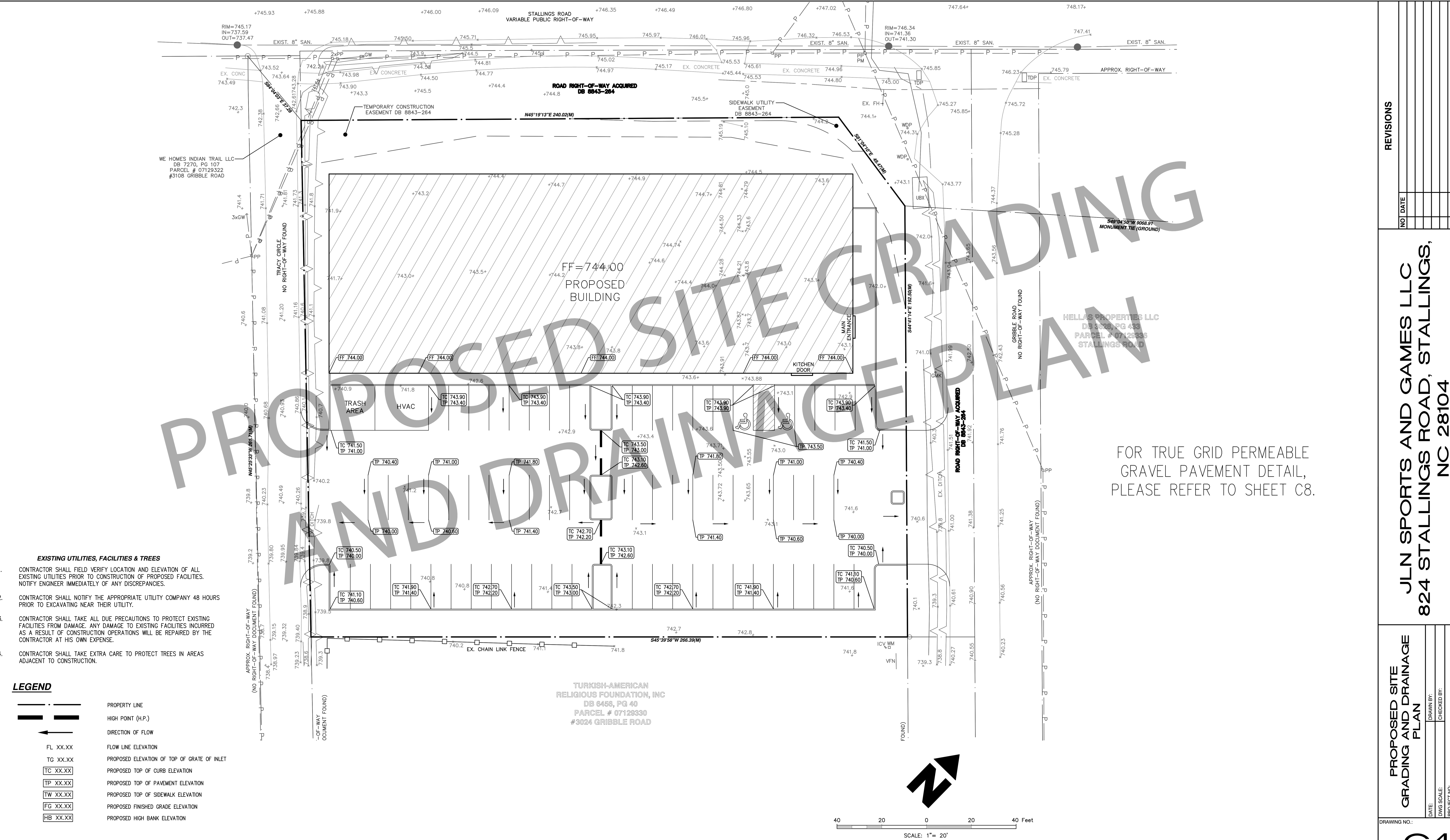
DRAWING NO.:

C3

- EXISTING UTILITIES, FACILITIES & TREES**
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF PROPOSED FACILITIES. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
 - CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY 48 HOURS PRIOR TO EXCAVATING NEAR THEIR UTILITY.
 - CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
 - CONTRACTOR SHALL TAKE EXTRA CARE TO PROTECT TREES IN AREAS ADJACENT TO CONSTRUCTION.

LEGEND

	PROPERTY LINE
	HIGH POINT (H.P.)
	DIRECTION OF FLOW
FL XX.XX	FLOW LINE ELEVATION
TG XX.XX	PROPOSED ELEVATION OF TOP OF GRATE OF INLET
TC XX.XX	PROPOSED TOP OF CURB ELEVATION
TP XX.XX	PROPOSED TOP OF PAVEMENT ELEVATION
TW XX.XX	PROPOSED TOP OF SIDEWALK ELEVATION
FG XX.XX	PROPOSED FINISHED GRADE ELEVATION
HB XX.XX	PROPOSED HIGH BANK ELEVATION



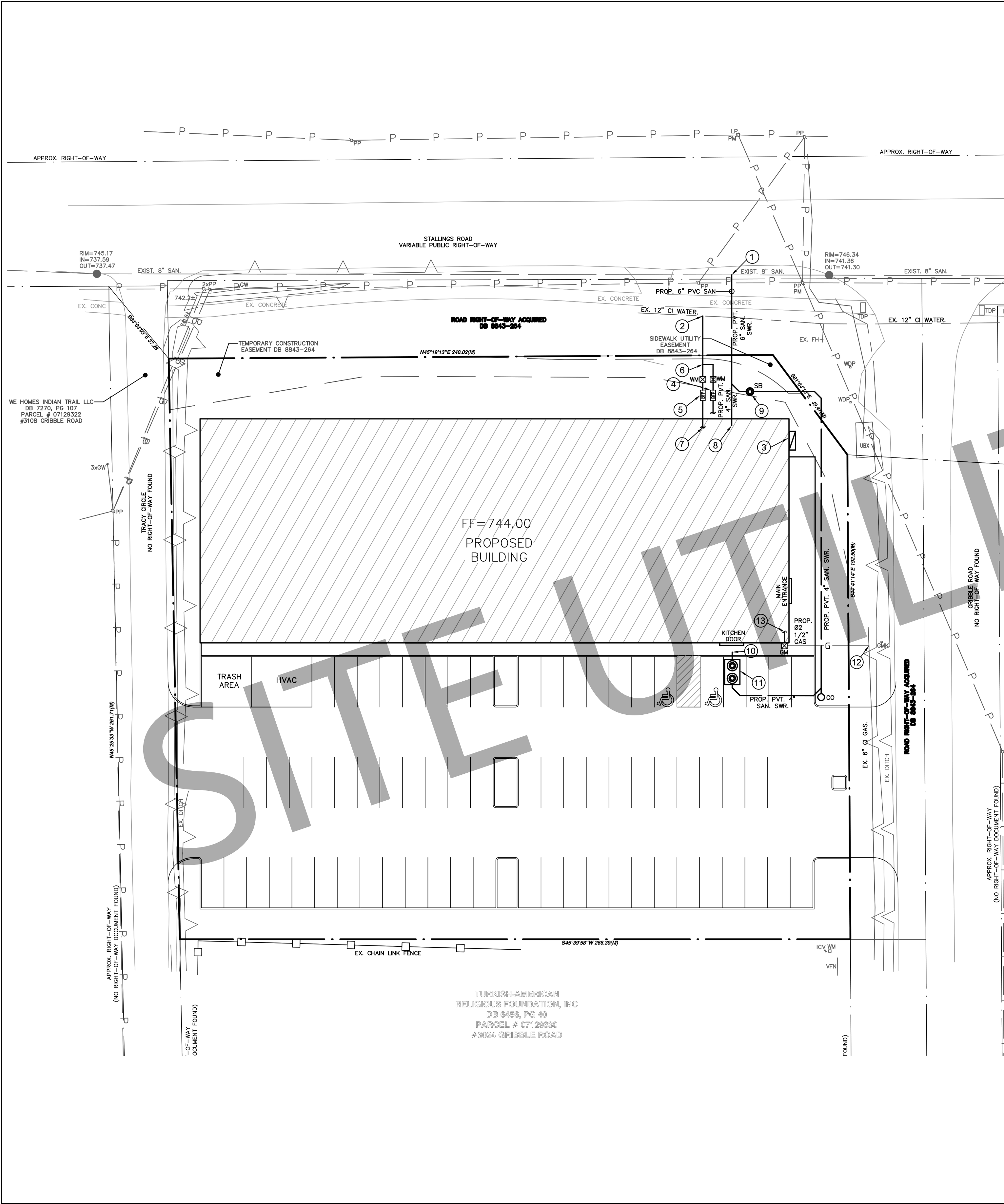
REVISIONS

NO	DATE

JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

PROPOSED SITE GRADING AND DRAINAGE PLAN

DATE:	DRAWN BY:
DWG SCALE:	CHECKED BY:
PROJECT NO:	
APPROVED BY:	



Demand Calculation Worksheet									
Proposed Service Line Size		2-Inch		Predominate Supply Type		Flush Tanks		Water Service	
Fixture Type	Occupancy	Type of Supply Control	No. of Fixtures	X	Load Value	=		Fixture Unit	Total
Full-bath group	Private	Flush Tank	0	X	3.6	=	0		
Full-bath group	Private	Flushometer Valve	0	X	8.0	=	0		
Bathtub	Private	Faucet	0	X	1.4	=	0		
Bathtub	Public	Faucet	0	X	4.0	=	0		
Dishwasher	Private	Automatic	2	X	1.4	=	2.8		
Drinking Fountain	Public	3/8" Valve	5	X	0.3	=	1.25		
Kitchen Sink	Private	Faucet	0	X	1.4	=	0		
Kitchen Sink	Commercial	Faucet	4	X	4.0	=	16		
Lavatory Sink	Private	Faucet	0	X	0.7	=	0		
Lavatory Sink	Public	Faucet	8	X	2.0	=	16		
Service Sink (incl. Mop Sink)	Commercial	Faucet	2	X	3.0	=	6		
Shower Head	Private	Mixing Valve	0	X	1.4	=	0		
Shower Head	Public	Mixing Valve	8	X	4.0	=	32		
Urinal	Public	1" Flushometer	0	X	10.0	=	0		
Urinal	Public	3/4" Flushometer	0	X	5.0	=	0		
Urinal	Public	Flush Tank	4	X	3.0	=	12		
Washing Mach. (8 lb.)	Private	Automatic	0	X	1.4	=	0		
Washing Mach. (8 lb.)	Public	Automatic	0	X	3.0	=	0		
Washing Mach. (15 lb.)	Public	Automatic	0	X	4.0	=	0		
Water Closet	Private	Flushometer Valve	0	X	6.0	=	0		
Water Closet	Private	Flush Tank	0	X	2.2	=	0		
Water Closet	Public	Flushometer Valve	0	X	10.0	=	0		
Water Closet	Public	Flush Tank	7	X	5.0	=	35		
Water Closet	Any	Flushometer Valve	0	X	2.0	=	0		
Hose Bibb 5/8"	Any	Valve	0	X	2.5	=	0		
Hose Bibb 3/4"	Any	Valve	0	X	5.0	=	0		
Other			0	X		=	0		
Notes: If the total WSFU is greater than 5000, this spreadsheet can not be used in calculating domestic demand. Provide an alternate method for computing the peak demand.								Total WSFU ¹	121.05 units
								Total Calculated Demand (gpm)	41.13 gpm

PIPE SIZING CHART (PRESSURE RANGE 50-59 PSI AND 60+ PSI)									
PIPE SIZING CHART FOR PRESSURE RANGE 50-59 PSI									
DEVELOPED LENGTH (FT)									
40	60	80	100	150	200	250	300	400	500
METER AND SERVICE PIPE SIZE	DISTRIBUTION PIPE SIZE								
3	3	2.5	2	1.5	1	1	1	0.5	0.5
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
32	32	32	32	25	18.5	14.5	12	9.5	8
32	32	32	32	30	22	16.5	13	10	8
32	32	32	32	32	32	32	28	24	20
80	80	80	80	80	68	57	48	35	28
80	80	80	80	80	75	63	53	39	29
87	87	87	87	87	87	87	82	70	1
151	151	151	151	151	139	120	94	79	1.5
151	151	151	151	151	146	126	97	81	2
87	87	87	87	87	87	87	87	87	1
275	275	275	275	275	275	275	275	247	213
365	365	365	365	365	365	329	272	232	2
533	533	533	533	533	533	533	533	486	2
533	533	533	533	533	533	533	533	533	2.5
PIPE SIZING CHART FOR PRESSURE RANGE 60 PSI									
DEVELOPED LENGTH (FT)									
40	60	80	100	150	200	250	300	400	500
METER AND SERVICE PIPE SIZE	DISTRIBUTION PIPE SIZE								
3	3	2.5	2	1.5	1.5	1	1	0.5	0.5
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
32	32	32	32	32	24	19.5	15.5	11.5	9.5
32	32	32	32	32	28	28	17	12	9.5
32	32	32	32	32	32	32	32	30	0.75
80	80	80	80	80	60	49	40	36	1
80	80	80	80	80	76	65	50	38	1.25
87	87	87	87	87	87	87	87	84	1
151	151	151	151	151	151	144	114	84	1.5
151	151	151	151	151	151	151	118	97	2
87	87	87	87	87	87	87	87	87	1
275	275	275	275	275	275	275	275	252	1.5
365	365	365	365	365	365	365	318	273	2
533	533	533	533	533	533	533	533	533	2
533	533	533	533	533	533	533	533	533	2.5

Source: International Plumbing Code 2015 edition

LEGEND

— GAS LINE
— WATER LINE
— SANITARY SEWER LINE

— CLOSURE
— F.I.S.
— W.V.
— W.M.
— G.M.
— G.M.M.
— S.S.M.
— S.S.M.H.
— FLOW DIRECTION

NOTES BY SYMBOL

1. PROPOSED SERVICE LINE CONNECTION TO EXISTING SEWER CONNECTION (PUMPED) - SEE SEWER MAINS FOR LOCATION AND DEPTH.
2. PROPOSED SERVICE LINE CONNECTION TO EXISTING WATER MAIN (PUMPED) - SEE WATER MAINS FOR LOCATION AND DEPTH.
3. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.
4. PROPOSED SERVICE LINE CONNECTION TO EXISTING WATER MAIN (PUMPED) - SEE WATER MAINS FOR LOCATION AND DEPTH.
5. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.
6. PROPOSED SERVICE LINE CONNECTION TO EXISTING WATER MAIN (PUMPED) - SEE WATER MAINS FOR LOCATION AND DEPTH.
7. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.
8. PROPOSED SERVICE LINE CONNECTION TO EXISTING WATER MAIN (PUMPED) - SEE WATER MAINS FOR LOCATION AND DEPTH.
9. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.
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13. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.
14. PROPOSED SERVICE LINE CONNECTION TO EXISTING WATER MAIN (PUMPED) - SEE WATER MAINS FOR LOCATION AND DEPTH.
15. PROPOSED SERVICE LINE CONNECTION TO EXISTING SANITARY SEWER MAIN (PUMPED) - SEE SANITARY SEWER MAINS FOR LOCATION AND DEPTH.

UTILITY NOTES

1. ALL DIMENSIONS TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. PLUMBING SHOWN ON PRIVATE PROPERTY IS NOT REVIEWED AND/OR APPROVED WITH THIS SITE PLAN. ALL PLUMBING ON PRIVATE PROPERTY WILL BE REVIEWED AND APPROVED DURING THE BUILDING PERMIT REVIEW.
3. ALL PLUMBING UTILITY INFORMATION IS SHOWN FOR INFORMATION ONLY. IF IT IS NOT REVIEWED AND APPROVED WITH THE SITE PLAN, IT IS NOT REVIEWED AND APPROVED WITH THE SITE PLAN.
4. PLUMBING UTILITY INFORMATION IS SHOWN FOR INFORMATION ONLY. IF IT IS NOT REVIEWED AND APPROVED WITH THE SITE PLAN, IT IS NOT REVIEWED AND APPROVED WITH THE SITE PLAN.

GENERAL NOTES – COMMERCIAL DEVELOPMENT:

PRIOR TO ANY FIELD CHANGES TO PROPOSED MATERIALS OR DESIGN, CONTRACTOR SHALL COORDINATE WITH DWJ PIPELINE INSPECTION AND THE ENGINEER OF RECORD. FIELD CHANGES REQUIRE REVISION PLAN REVIEW AND APPROVAL BY THE CITY REVIEW ENGINEER AND IS TO BE COORDINATED THROUGH THE U.C.W. PIPELINE INSPECTOR AND ENGINEER OF RECORD.

WATER AND WASTEWATER EASEMENTS SHALL ALSO INCLUDE ADDITIONAL AREA OF WORKING SPACE FOR CONSTRUCTION AND MAINTENANCE OF SYSTEM.

WATER METERS/SERVICES SHALL BE LOCATED:
NO LESS THAN 2 FT BEYOND PROPOSED CURB OR AS SHOWN.
NO CLOSER THAN 3 FT (FOR < 1") OR 4 FT (FOR ≥ 1") IN SPACING BETWEEN METERS
WITHIN PUBLIC SIDEWALK WHERE PRESENT OR OTHER ALLOWABLE PROTECTED LOCATION
NOT BE INSTALLED IN DRIVEWAYS NOR ANY VEHICULAR PATHS.

ALL WASTEWATER LATERALS SHALL BE PLACED WITHIN PAVED SIDEWALKS AND NOT WITHIN VEHICULAR PATHS. UNLESS OTHERWISE APPROVED BY U.C.W. INSPECTOR. SIZE AND REFERENCED AS FOLLOWS: 1"= 1-1/2" PLAT TOTAL: 1-6". LATERAL CLEANOUTS SHALL BE INSTALLED BY PERMIT ALONG WITH THE CONNECTION TO PRIVATE PLUMBING.

ALL 8" THROUGH 15" PVC WASTEWATER MAINS SHALL BE ASTM 3034 (SDR-35), UNLESS NOTED OTHERWISE. ALL WASTEWATER LATERALS SHALL BE ASTM 3034 (SDR-35), UNLESS NOTED OTHERWISE.

THE MAXIMUM TRENCH WIDTH IS 32" FOR ALL PIPES DIAMETERS EQUAL TO OR SMALLER THAN 12".

THE CERTIFICATE OF ACCEPTANCE (COA) WILL NOT BE ISSUED UNTIL ALL OF THE FOLLOWING ITEMS HAVE BEEN COMPLETED:
ALL WATER AND WASTEWATER APPURTENANCES HAVE BEEN ADJUSTED TO THEIR FINAL POSITION AND A FINAL INSPECTION FOR THE P-CONTRACT HAS BEEN SUCCESSFULLY COMPLETED AND;
THE FINAL PLAN HAS BEEN FILED WITH THE COUNTY (IF APPLICABLE) AND MATCHES THE DESIGN PLANS AND;
ALL FEES OWED TO THE CITY HAVE BEEN PAID AND;
A PAY AFFIDAVIT SENT TO PRIVATE DEVELOPMENT STATING THAT THE CONTRACTOR HAS BEEN PAID IN FULL.

FIRE HYDRANTS SHALL BE CONSTRUCTED PER U.C.W. STANDARDS DRAWINGS MANUAL, PG. 224. HYDRANTS SHALL BE A MINIMUM OF 2.5' AND A MAXIMUM OF 7.5' FROM THE BACK OF CURB WITH 36" OF CLEARANCE FROM ALL OBSTRUCTIONS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH U.C.W. STANDARDS PRIOR TO THE MAIN BEING PLACED IN SERVICE AND THE HYDRANTS PAINTED BY U.C.W. ANY DELAYS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR IF THE HYDRANT HAS NOT BEEN INSTALLED PER U.C.W. STANDARDS. IT IS RECOMMENDED THAT EXISTING CURBS, SIDEWALKS, FINAL GROUND ELEVATIONS, AND OTHER FEATURES BE STAKED BY THE CONTRACTOR AS NEEDED TO ENSURE COMPLIANCE WITH U.C.W. STANDARDS AND AVOID ADDITIONAL ADJUSTMENTS OR RELOCATIONS THAT MAY DELAY APPROVALS.

EMBEDMENT FOR WATER MAINS SHALL BE PER THE CURRENT U.C.W. STANDARD DRAWINGS MANUAL.

WATER MAINS SIZED 12" AND UNDER SHALL BE A MINIMUM OF 4'-FT UNDER IMPROVED SURFACES AND 6'-FT UNDER UNIMPROVED SURFACES.

STREET AND ALLEY CUTS WILL FOLLOW THE LATEST EDITION OF CITY OF STALLINGS, NC DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION PAVEMENT CUT AND REPAIR STANDARDS MANUAL. ALL WATER AND WASTEWATER SERVICE CUTS IN PAVEMENT SHALL HAVE THE DITCH LINE FILLED TO PAVEMENT BASE LINE WITH LOW STRENGTH FAST FIX FLOWABLE FILL.

CONSTRUCTION SPECIFICATIONS AND APPURTENANCES WILL BE COVERED BY THE CURRENT EDITIONS (AS OF THE TIME OF CONSTRUCTION COMMENCEMENT) OF THE FOLLOWING MANUALS: UNION COUNTY WATER UTILITIES STANDARD DRAWINGS FOR WATER AND WASTEWATER CONSTRUCTION, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION STANDARDS, THE CITY OF STALLINGS, NC COUNCIL OF GOVERNMENTS PUBLIC WORKS CONSTRUCTION STANDARDS.

CONTRACTOR WILL REMOVE EXISTING WATER METERS NOT USED FOR PROPOSED DEVELOPMENT. REMOVE METERS AND METER LIDS IN A WAY AS TO NOT DAMAGE THE METER NOR LID AND DELIVER SALVAGED METERS TO THE TOWN OF MATTHEW. CONTACT (704)-847-4411 48-HOURS PRIOR TO METER DELIVERY. CONTRACTOR SHALL KILL EXISTING DEADHEAD SERVICE FOR REMOVED METERS AT THE MAIN LINE.

PRIOR TO THE START OF INSTALLATION WORK, APPROVED RIGHT OF WAY PERMIT, APPROVED TRAFFIC CONTROL PLAN, AND CUT-SHEETS FOR WATER AND WASTEWATER INSTALLATION SHOULD BE SUBMITTED TO U.C.W. PIPELINE INSPECTION.

THE CITY OF STALLINGS, NC DEPARTMENT OF PUBLIC WORKS WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT 704-244-8273 TO COORDINATE THE SUBMITTAL, REVIEW AND APPROVAL.

CONTRACTOR MAY ONLY LAY PIPE WHEN TEMPERATURE IS 36 DEGREES F AND RISING. ANY SPECIAL METHODOLOGY OR PROCEDURES FOR LAYING PIPE AT LESS THAN 36 DEGREES REQUIRES THE APPROVAL OF U.C.W. PIPELINE INSPECTION SUPERINTENDENT.

LOW-STRENGTH FLOWABLE FILL SHALL BE USED AS BACKFILL MATERIAL AROUND NEW MANHOLES LOCATED WITHIN EXISTING OR NEW PAVEMENT.

ALL NEW MANHOLES OR EXISTING MANHOLES AFFECTED BY CONSTRUCTION OF THIS CONTRACT SHALL HAVE THE INTERIOR COATED WITH RAVEN 405 OR APPROVED EQUAL. COATING MUST BE APPLIED BY CERTIFIED APPLICATOR. SPRAY, BRUSH, OR ROLLER APPLICATION TO A MINIMUM OF 200 MIL THICKNESS.

CONTRACTOR SHALL REPLACE ALL LEAD-COVERED WATER PIPE FITTINGS ENCOUNTERED WITH NEW DWJ APPROVED FITTINGS/APPURTENANCES.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL REQUIRED FITTINGS/COUPLINGS IN A TIMELY MANNER. ANY DELAY DUE TO SHUT DOWN AND CONNECTION ISSUES DURING WATER MAIN TIE-IN ARE CONSIDERED INCIDENTAL WORK AND SHALL BE BORNE BY THE CONTRACTOR. ANY SPECIALIZED FITTING/COUPLINGS SHALL BE INSTALLED BY QUALIFIED PERSONNEL WITH THAT SPECIFIC SKILL.

ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH U.C.W. STANDARDS PRIOR TO THE MAIN BEING PLACED IN SERVICE AND THE HYDRANTS PAINTED BY U.C.W. ANY DELAYS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR IF THE HYDRANT HAS NOT BEEN INSTALLED PER U.C.W. STANDARDS. IT IS RECOMMENDED THAT EXISTING CURBS, SIDEWALKS, FINAL GROUND ELEVATIONS, AND OTHER FEATURES BE STAKED BY THE CONTRACTOR AS NEEDED TO ENSURE COMPLIANCE WITH U.C.W. STANDARDS AND AVOID ADDITIONAL ADJUSTMENTS OR RELOCATIONS THAT MAY DELAY APPROVALS.

WATER VALVES SHOULD BE ACCESSIBLE AND READY FOR PERMANENT ACCESSIBILITY BEFORE WATER MAIN CAN BE PLACED IN SERVICE AND TIE-INS COMPLETED. VALVES SHOULD BE PROPERLY BACKFILLED AND PLACED TO GRADE AND NOT COVERED BY PLATES, BACKFILL, OR OTHER CONSTRUCTION MATERIALS. PVC VALVE STACKS ARE NOT ALLOWED.

NOTES

1. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND WILL BE ON FIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION.

2. WHERE A NEW PVC WASTEWATER MAIN OR LATERAL (WITH A MINIMUM PRESSURE RATING OF 150 PSI) CROSSES UNDER AN EXISTING WATER LINE, AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF 6 INCHES BETWEEN OUTSIDE DIAMETERS SHALL BE MAINTAINED. ONE SEGMENT OF THE SEWER PIPE SHALL BE CENTERED ON THE WATER LINE SUCH THAT THE JOINTS OF THE SEWER PIPE ARE EQUIDISTANT AND AT LEAST 9 FEET HORIZONTALLY FROM THE CENTERLINE OF THE WATER LINE. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WATERLINE. THE SANITARY SEWER MAIN SHALL BE EMBEDDED IN FLOW ABLE FILL FROM ONE-QUARTER OF THE DIAMETER OF THE SANITARY SEWER MAIN BELOW THE CENTERLINE OF THE PIPE UP TO 12 INCHES ABOVE THE TOP OF PIPE FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT. MINIMUM 9 FEET IN EACH DIRECTION FROM WATER LINE, PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

3. CONTRACTOR SHALL COORDINATE WITH DEVELOPER FOR ALL UTILITY SERVICES NEEDED FOR ANY AUXILIARY STRUCTURES OR AMENITIES, UNLESS OTHERWISE NOTED IN THIS SET OF PLANS.

NOTES:

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR STALLINGS, NORTH CAROLINA, LATEST EDITION, AND THE CITY OF UNION COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION ADDENDUM.

DURING THE CONSTRUCTION OF THESE IMPROVEMENTS, ANY INTERPRETATION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR STALLINGS, NORTH CAROLINA, AND ANY MATTER WHICH REQUIRES THE APPROVAL OF THE OWNER, MUST BE APPROVED BY THE DIRECTOR OF PUBLIC WORKS AND TRANSPORTATION OR HIS DESIGNEE BEFORE ANY CONSTRUCTION INVOLVING THAT DECISION COMMENCES. ASSUMPTIONS ABOUT WHAT MATTER DECISIONS MIGHT BE WHICH ARE MADE DURING THE BIDDING PHASE WILL HAVE NO BEARING ON THE DECISION.

FOR ADJUSTMENT OF UNION COUNTY WATER UTILITIES APPURTENANCES OR TO VERIFY LOCATIONS OF EXISTING WATER AND WASTE WATER MAINS IN AREA, CALL (704) 296-4210 AT LEAST (3) THREE WORKING DAYS PRIOR TO CONSTRUCTION.

STREETS, ALLEYS, SIDEWALKS, DRIVEWAYS, AND STORM DRAINAGE FACILITIES IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF UNION COUNTY, STANDARD CONSTRUCTION DETAILS, FILE 251D-1, LATEST EDITION. E. ALL CONCRETE FOR PAVEMENT SHALL BE 4000 PSI FOR MACHINE FINISH AND 4500 PSI IF IT IS NECESSARY FOR HAND FINISH.

REVISIONS

NO	DATE								

JLN SPORTS AND GAMES LLC
824 STALLINGS ROAD, STALLINGS,
NC 28104

SITE UTILITIES
PLAN

DATE:	DRAWN BY:	CHECKED BY:
DWG SCALE:		
PROJECT NO:		
APPROVED BY:		

DRAWING NO.:

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