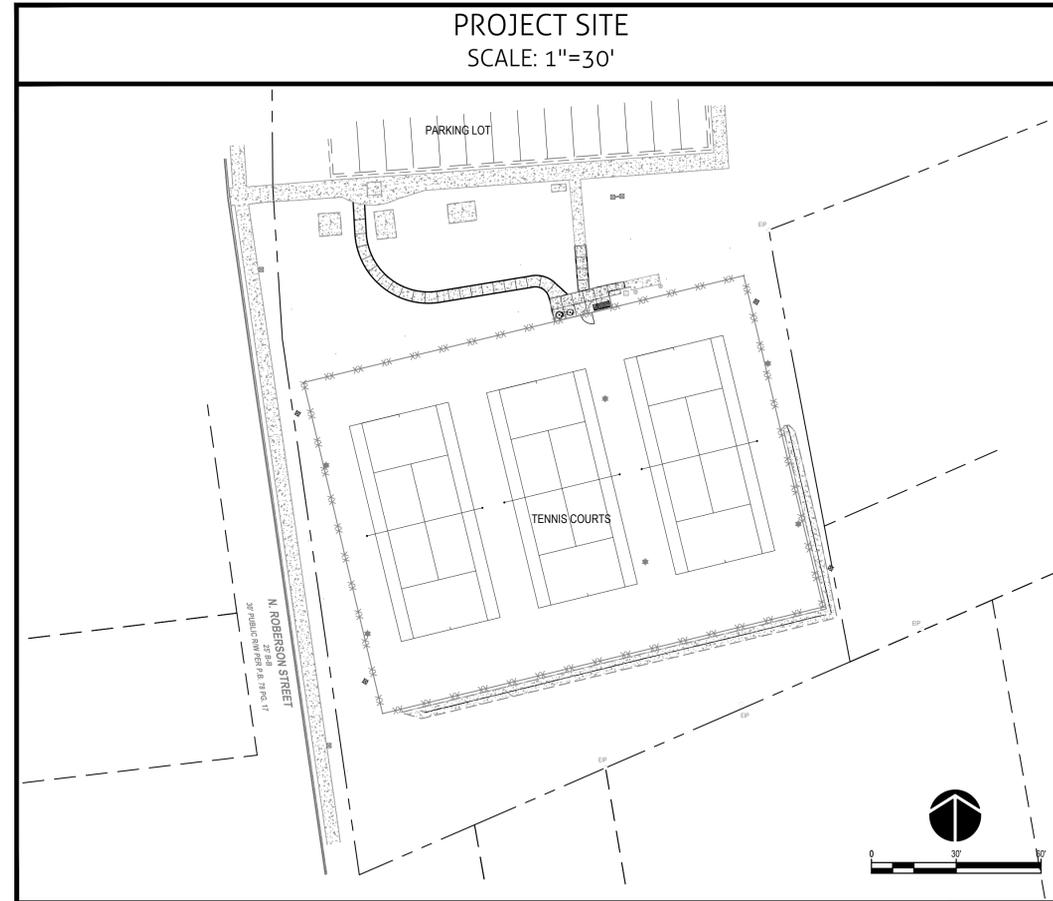
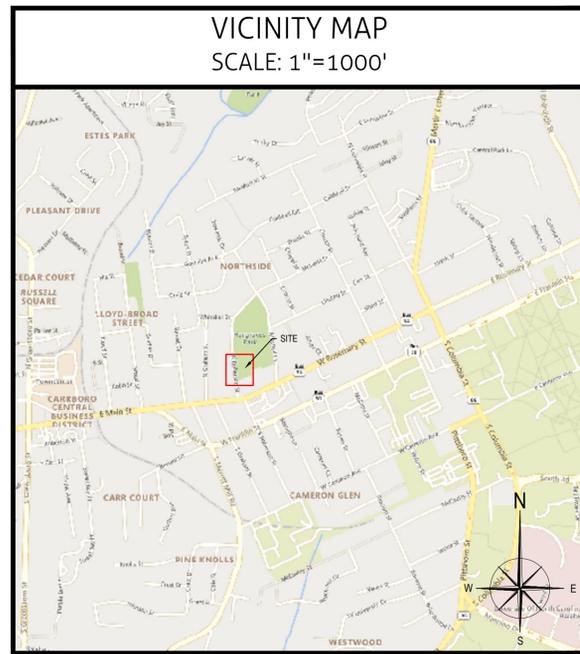


HARGRAVES PARK TENNIS COURT RENOVATION

100% CONSTRUCTION DRAWINGS

216 N ROBERSON ST,
CHAPEL HILL, NC, 27516
ORANGE COUNTY
SEPTEMBER 9, 2022



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CLIENT

TOWN OF CHAPEL HILL PARKS AND RECREATION
PROJECT MANAGER: MARCIA PURVIS
200 PLANT ROAD
CHAPEL HILL, NC 27514
PHONE: 919-968-2743

PREPARED BY:



WithersRavenel
Engineers | Planners | Surveyors

137 S Wilmington St #200 | Raleigh, NC 27601 | t: 919.535.5200 | license #: F-1479 | www.withersravenel.com



GENERAL NOTES:

1. TOPOGRAPHIC SURVEY AND EXISTING TREES ARE SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED JANUARY 11, 2022.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS AS APPLICABLE.
3. WORK ON THIS PROJECT SHALL CONFORM TO THESE PLANS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, MUNICIPAL STANDARDS AND SPECIFICATIONS, ANY GEOTECHNICAL REPORTS, AND ANY OTHER APPLICABLE DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN, UNLESS OTHERWISE NOTED IN THESE PLANS.
4. ANY DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER IN WRITING AND PRIOR TO BIDDING IF APPLICABLE. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER AND APPROVAL BY OWNER SHALL BE DONE AT THE CONTRACTOR'S RISK.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY DURING ALL PHASES OF CONSTRUCTION. ALL WORK SHALL COMPLY WITH MUNICIPAL, COUNTY AND STATE REGULATIONS, AND O.S.H.A. STANDARDS. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
6. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING, AND SUBSEQUENTLY PROTECTING, ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) THAT LIE IN OR ADJACENT TO THE PROJECT SITE. THE CONTRACTOR SHALL CALL "811" FOR PROPER IDENTIFICATION OF EXISTING UTILITIES AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROTECT ALL EXISTING SITE ELEMENTS THAT ARE TO REMAIN, INCLUDING BUT NOT LIMITED TO SIGNS, ROADWAYS, PATHS, STRUCTURES, ELECTRICAL, COMMUNICATION, AND OTHER DRY UTILITIES, WET UTILITIES (SEWER, WATER, STORM SEWER), NATURAL VEGETATION, AND OTHER EXISTING PROPERTY ITEMS, DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING ITEMS DAMAGED DURING CONSTRUCTION.
8. CONTRACTOR SHALL MAKE EVERY EFFORT TO SAVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE SHALL REPLACE PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DESTROYED BY THE CONTRACTOR.
9. CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN SUITABLE BARRIERS, FENCES, SIGNS, FLAGMEN, WATCHMEN, AND OTHER ADEQUATE PROTECTION AS NECESSARY TO ENSURE THE SAFETY OF THE PUBLIC AND THOSE ENGAGED IN THE CONSTRUCTION WORK. ALL SAFETY MEASURES SHALL BE MAINTAINED AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK. CONSTRUCTION SIGNING SHALL BE CLEARLY LEGIBLE, PROMINENTLY DISPLAYED, AND IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", UNLESS OTHERWISE NOTED ON THE PLANS.
10. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK IN ORDER TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC AND SHALL COORDINATE WITH AND OBTAIN APPROVAL FROM STATE AND LOCAL REGULATORY AGENCIES ON TRAFFIC CONTROL PLANS.
11. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AND IF APPLICABLE AT AN APPROVED DISPOSAL FACILITY.
12. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL PERMIT APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES.
13. CONSTRUCTION STAKEOUT FOR THIS PROJECT MAY BE PERFORMED BY THE CONTRACTOR, USING A DIGITAL (CADD) FILE PROVIDED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON THIS PLAN (I.E. PAVEMENT WIDTHS, CURB RADII, BUILDING SETBACKS, BUILDING FOOTPRINTS, ETC.). ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.
14. TESTING OF MATERIAL REQUIRED FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LAB AND THE PAYMENT OF EACH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED MEETS THE REQUIREMENT OF THE NCDOT AND MUNICIPAL SPECIFICATIONS.
15. CONTRACTOR SHALL USE METHODS THY MINIMIZE DUST AND DEBRIS FROM THE CONSTRUCTION OPERATION.
16. IN COMPLIANCE WITH THE NOISE ORDINANCE, TOWN CODE SECTION 11-40, CONSTRUCTION OPERATIONS FOR WHICH BUILDING PERMITS HAVE BEEN ISSUED SHALL BE LIMITED TO 7:00 AM TO 9:00 PM ON WEEKDAYS, AND 8:00 AM TO 9:00 PM ON WEEKENDS.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE, BUT IS NOT LIMITED TO, THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF ABANDONED UTILITIES, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.

DEMOLITION NOTES (CONT.):

4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. EXISTING UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
6. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
7. CONTRACTOR SHALL COORDINATE (AS REQUIRED) RELOCATION OF ALL EXISTING OVER HEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
8. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
9. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
10. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND.

GRADING NOTES:

1. REFER TO SITE CONSTRUCTION PLANS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
2. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES, ROADWAYS, AND ENVIRONMENTALLY SENSITIVE AREAS SUCH AS BUFFERS AND WETLANDS.
3. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
4. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE. REFER TO FINAL GEOTECHNICAL REPORT FOR ANY SPECIAL FILL MATERIAL REQUIRED FOR THIS PROJECT, IF ANY.
5. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL MEET THE REQUIREMENTS OF THE FINAL GEOTECHNICAL REPORT RECOMMENDATIONS, AND SHALL AT A MINIMUM BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST AS SET OUT IN ASTM STANDARD D-1557.
6. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
7. PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
8. CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE ANY DEWATERING NECESSARY TO CONSTRUCT THE PROJECT AS SHOWN ON THE PLANS.
9. ACCESSIBLE ROUTES MUST BE PROVIDED IN ACCORDANCE WITH THE CURRENT ADA REQUIREMENTS. THE RUNNING SLOPE OF WALKING SURFACES CANNOT BE STEEPER THAN 1:20 AND CROSS SLOPE OF WALKING SURFACES CANNOT BE STEEPER THAN 1:48.
10. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES AS REQUIRED.
11. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
12. ALL PAVEMENT SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D-1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
13. FILL SHALL BE PLACED AND COMPACTED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
14. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL SOIL TESTING IS PERFORMED AND THE RESULTS FORWARDED TO THE ENGINEER AND OWNER.

EROSION & SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AS NECESSARY TO ENSURE ALL SEDIMENT IS DIRECTED INTO EROSION CONTROL MEASURES.
2. CONTRACTOR SHALL CLEAR ONLY AS REQUIRED TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES. CONTRACTOR SHALL INSTALL SILT FENCE, DIVERSION DITCHES, AND THEN BEGIN GRADING.
3. IF STORM CROSS DRAINAGE CANNOT BE INSTALLED PRIOR TO GRADING, TEMPORARY HDPE SHALL BE USED TO CROSS WET WEATHER CHANNELS.
4. CONTRACTOR SHALL ENSURE GRADING OPERATION IS CONDUCTED IN A MANNER THAT DOES NOT ALLOW ANY SEDIMENT INTO CREEKS.
5. ALL STORM DRAINAGE PIPE SHALL BE PROTECTED DURING CONSTRUCTION.
6. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER NPDES LATEST REQUIREMENTS AND MATCH ADJACENT CONDITIONS. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED GROUND COVER WITHIN 7 CALENDAR DAYS FROM THE LAST DISTURBANCE. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED GROUND COVER WITHIN 14 CALENDAR DAYS FROM THE LAST DISTURBANCE. TOPSOIL SHALL BE WASTED OFFSITE OR IN FILL AREAS AS SHOWN.

GENERAL LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS NOT TO DAMAGE EXISTING PLANTS, FACILITIES AND STRUCTURES THAT ARE TO REMAIN. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND OWNER. ADJACENT STREETS AND SIDEWALKS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST-FREE.
2. NO CHANGES TO ANY ASPECT OF APPROVED SITE PLAN, INCLUDING BUT NOT LIMITED TO LANDSCAPING, GRADING, LIGHTING, OR UTILITIES SHALL BE MADE WITHOUT THE APPROVAL OF THE GOVERNING MUNICIPALITY.
3. ALL PLANTS ARE TO BE FULLY GUARANTEED (INCLUDING LABOR AND MATERIALS) FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM FINAL ACCEPTANCE.
4. PLANTING SEASON IS OCTOBER 15 - MARCH 15, UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT. ALL PLANTS THAT ARE UNABLE TO BE IMMEDIATELY PLANTED SHALL BE STORED IN A PROTECTED AREA OUT OF DIRECT SUN AND WIND. PLANTS SHALL BE EVENLY AND CONSISTENTLY WATERED, AS NEEDED, TO PREVENT DRYING OF ROOTS. ROOT BALLS OF B&B STOCK SHALL BE COVERED WITH AT LEAST 4 INCHES OF HARDWOOD MULCH TO MAINTAIN MOISTURE IN ROOTS.
5. ALL LANDSCAPE AREAS ARE TO BE GRADED FOR POSITIVE DRAINAGE AND TO ENSURE NO STANDING WATER. SEE GRADING PLAN FOR SPECIFIC GRADING INFORMATION.
6. CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING, BUT NOT LIMITED TO WATERING, MULCHING, SPRAYING, FERTILIZING, ETC.) OF THE PLANTING AREAS UNTIL FINAL ACCEPTANCE.
7. ANY PLANT WHICH DIES, TURNS BROWN OR DEFOLIATES PRIOR TO FINAL ACCEPTANCE OF THE WORK SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, IN ACCORDANCE WITH THE APPROPRIATE PLANTING SEASON, QUANTITY AND SIZE TO MEET PLAN SPECIFICATIONS.
8. UTILITIES SHOWN ON THE LANDSCAPE DRAWINGS ARE FOR REFERENCE ONLY. SEE UTILITY DRAWINGS FOR EXISTING AND PROPOSED UTILITY LOCATIONS. THE CONTRACTOR MUST LOCATE AND VERIFY ALL SUCH INFORMATION, INCLUDING INFORMATION NOT SHOWN ON THE PLANS, BY CONTACTING THE INDIVIDUAL UTILITY COMPANY & INVESTIGATING THE SITE TO DETERMINE THE EXACT LOCATION OF UTILITY LINES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS OWN EXPENSE, AND TO THE SATISFACTION OF THE PROJECT OWNER AND THE UTILITY OWNER, DAMAGE TO ANY UTILITY CAUSED BY HIS WORK. HE SHALL IMMEDIATELY NOTIFY THE OWNER AND THE UTILITY OWNER OF ANY DAMAGE TO ANY UTILITY BY HIS OPERATION.
9. THE SITE SHALL BE STABILIZED AND SEEDED PRIOR TO THE COMPLETION OF WORK.

TREE PROTECTION NOTES:

1. ALL TREES THAT ARE TO REMAIN, WITHIN OR DIRECTLY ADJACENT TO THE LIMITS OF WORK, MUST BE PROTECTED WITH TREE PROTECTION FENCE AS SHOWN ON THE PLANS AND DETAILS. FENCING IS TO BE INSTALLED PRIOR TO CONSTRUCTION, MAINTAINED THROUGHOUT, AND REMOVED ONLY AT THE END OF THE PROJECT.
2. NONE OF THE FOLLOWING SHALL OCCUR WITHIN THE ROOT ZONE OF A TREE WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST: ALTERATION OR DISTURBANCE TO EXISTING GRADE; STAGING OR STORAGE OF CONSTRUCTION MATERIALS, EQUIPMENT, SOIL OR DEBRIS; TRENCHING; OR DISPOSAL OF ANY LIQUIDS.
3. APPROVED EXCAVATIONS WITHIN THE DRIP LINE SHALL PROCEED WITH CARE BY USE OF HAND TOOLS OR EQUIPMENT THAT WILL NOT CAUSE INJURY TO TREE TRUNKS, BRANCHES AND ROOTS.
4. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST. EXPOSED ROOTS 2 INCHES AND LARGER IN DIAMETER SHALL BE WRAPPED IN BURLAP OR OTHER APPROVED MATERIAL AND KEPT MOIST AT ALL TIMES.
5. IF THERE ARE ANY TREE CONFLICTS ON THIS JOB SITE, PERMIT HOLDER MUST SUSPEND ALL WORK THAT CONTRIBUTES TO THE CONFLICT AND IMMEDIATELY CONTACT LANDSCAPE ARCHITECT OR PROJECT ARBORIST FOR DIRECTION AND CLEARANCE TO CONTINUE THE CONFLICTING WORK.
6. TREES THAT ARE PROTECTED SHALL BE THOROUGHLY WATERED AS REQUIRED TO KEEP ROOT BALLS FROM DRYING OUT, ESPECIALLY BETWEEN APRIL THROUGH SEPTEMBER.

CONSTRUCTION SEQUENCE:

1. INSTALL CONSTRUCTION ENTRANCES, SILT FENCE, STONE DRAINS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS REQUIRED TO INSTALL THESE DEVICES.
2. BEGIN LIMITED CLEARING AND GRUBBING ACTIVES AS DIRECTED BY THE ENGINEER.
3. STOCKPILE TOPSOIL AND SUITABLE FILL MATERIAL. INSTALL SILT FENCE AROUND STOCKPILE AREAS. DISPOSE OF UNSUITABLE SOILS AND ALL OTHER WASTE MATERIALS OFF-SITE IN A LEGAL MANNER. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURERS REQUIRED.
4. BEGIN EXCAVATION AND TRENCHING ACTIVITIES ONLY AFTER ALL REQUIRED EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
5. CONTRACTOR TO CONDUCT A WEEKLY SITE INSPECTION AND AFTER EACH RAINFALL EVENT TO DETERMINE WHICH AREAS CAN BE TEMPORARILY OR PERMANENTLY SEEDED, WHICH DEVICES NEED MAINTENANCE, REPAIR, ETC., AND TO ENSURE THAT THE EROSION CONTROL MEASURES ARE PERFORMING ADEQUATELY. PERFORM ANY NECESSARY MAINTENANCE.
6. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE WITH VEGETATION OR STONE BASE. ALL AREAS INDICATED TO BE PAVED SHALL BE STABILIZED WITH STONE AS SOON AS THEY ARE BROUGHT TO FINAL GRADE. MAINTAIN DIVERSIONS, INLET PROTECTION, AND SEDIMENT BASINS UNTIL SITE IS COMPLETELY STABILIZED.
7. REMOVE STOCKPILES AND MATERIALS AND DECOMMISSION STAGING AND LAYDOWN AREAS.
8. SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS, INCLUDING ALL STORAGE, STAGING, AND OFF-SITE STAGING, IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH ON THE PLANS.
9. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, CALL FOR AN INSPECTION BY AN ENVIRONMENTAL INSPECTOR.
10. IF SITE IS APPROVED, REMOVE ANY TEMPORARY DIVERSIONS, SILT FENCES, SEDIMENT TRAPS, ETC., AND RE-GRADE AND SEED OR STABILIZE ANY RESULTING BARE AREAS.
11. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY AN ENVIRONMENTAL INSPECTOR. OBTAIN CERTIFICATE OF COMPLETION.

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CONSTRUCTION PLANS
**CHAPEL HILL HARGRAVES PARK
TENNIS COURT RENOVATION**

216 N ROBERSON ST | CHAPEL HILL, NC 27516 | ORANGE COUNTY

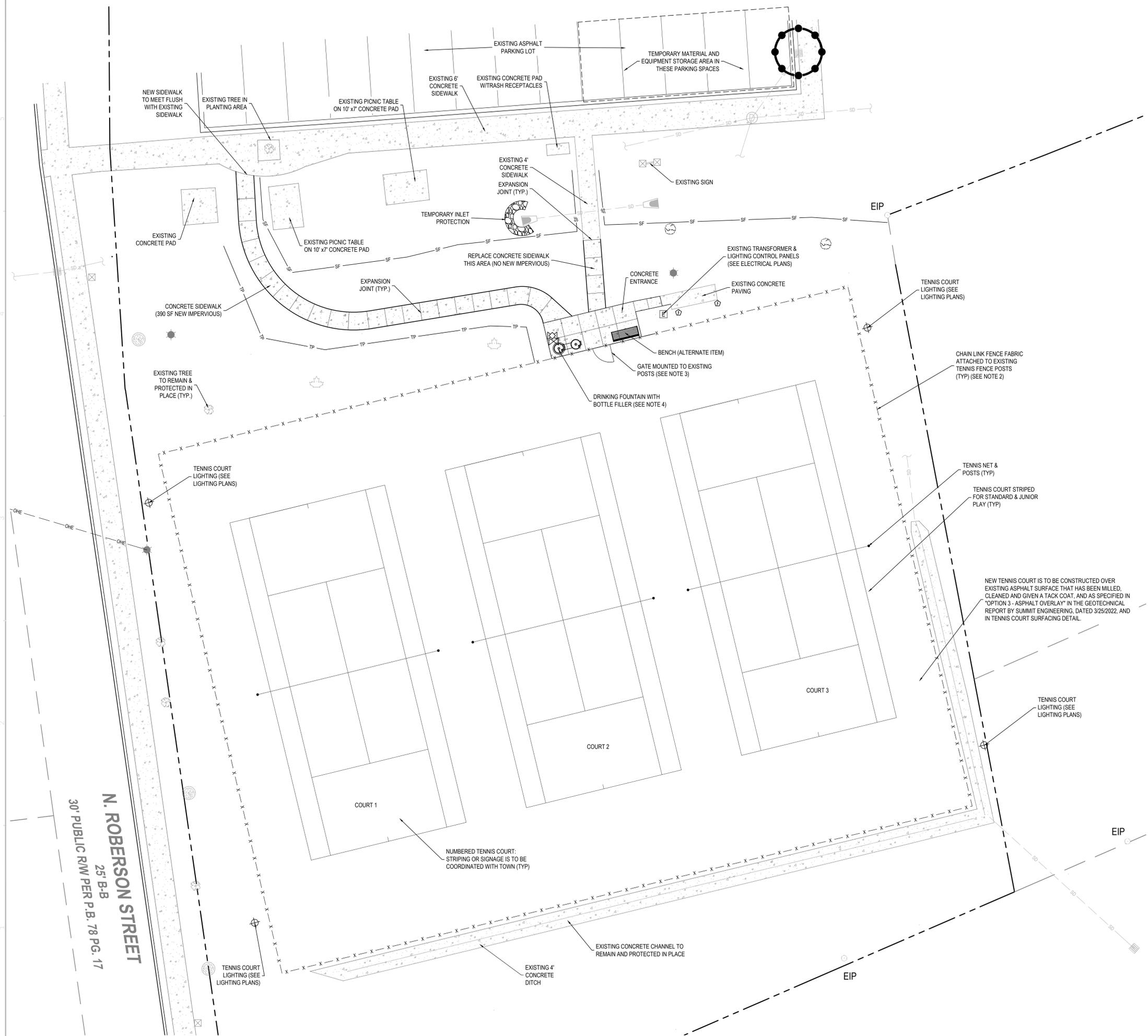


INITIAL PLAN DATE: 09/09/2022
REVISIONS:

GENERAL NOTES

C0.01

EST. 1982



SITE LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED CONCRETE PAVING
	PROPOSED TENNIS COURT LIGHT
	PROPOSED BENCH (ALTERNATE ITEM)
	PROPOSED DRINKING FOUNTAIN WITH BOTTLE FILLER
	EXISTING TREES
	PROPOSED TENNIS COURT FENCE

- DRAWING NOTES:**
- TENNIS COURT SURFACING IS TO BE INSTALLED ON TOP OF EXISTING ASPHALT SURFACE. NEW GRADES WILL BE HIGHER THAN EXISTING GRADES.
 - TENNIS FENCING IS TO BE INSTALLED ON EXISTING POSTS (OR NEW POSTS IF REPLACED IN KIND). EXISTING FENCE PANELS IN GOOD CONDITION MAY BE ADJUSTED TO FIT NEW OPENING DIMENSIONS AND REINSTALLED. FENCE PANELS THAT HAVE BEEN REMOVED ARE TO BE REPLACED IN KIND.
 - EXISTING GATE MAY BE ADJUSTED AND REINSTALLED IF IT IS IN GOOD CONDITION. GATE FRAME SHALL BE ADJUSTED TO FIT NEW OPENING DIMENSIONS. IF EXISTING GATE IS IN POOR CONDITION A NEW GATE SHALL BE PROVIDED PER DETAILS.
 - NEW DRINKING FOUNTAIN WITH BOTTLE FILLER IS TO BE INSTALLED AS REQUIRED BY MANUFACTURER USING EXISTING WATER SERVICE AND DRAINAGE SYSTEM. CONTRACTOR IS TO LOCATE THE WATER LINE IN THE FIELD AND EXTEND AS NECESSARY TO CONNECT NEW FOUNTAIN. CONTRACTOR IS TO CONFIRM EXISTING WATER LINE IS IN PROPER WORKING ORDER WITHOUT LEAKS AND WATER IS FIT FOR DRINKING.

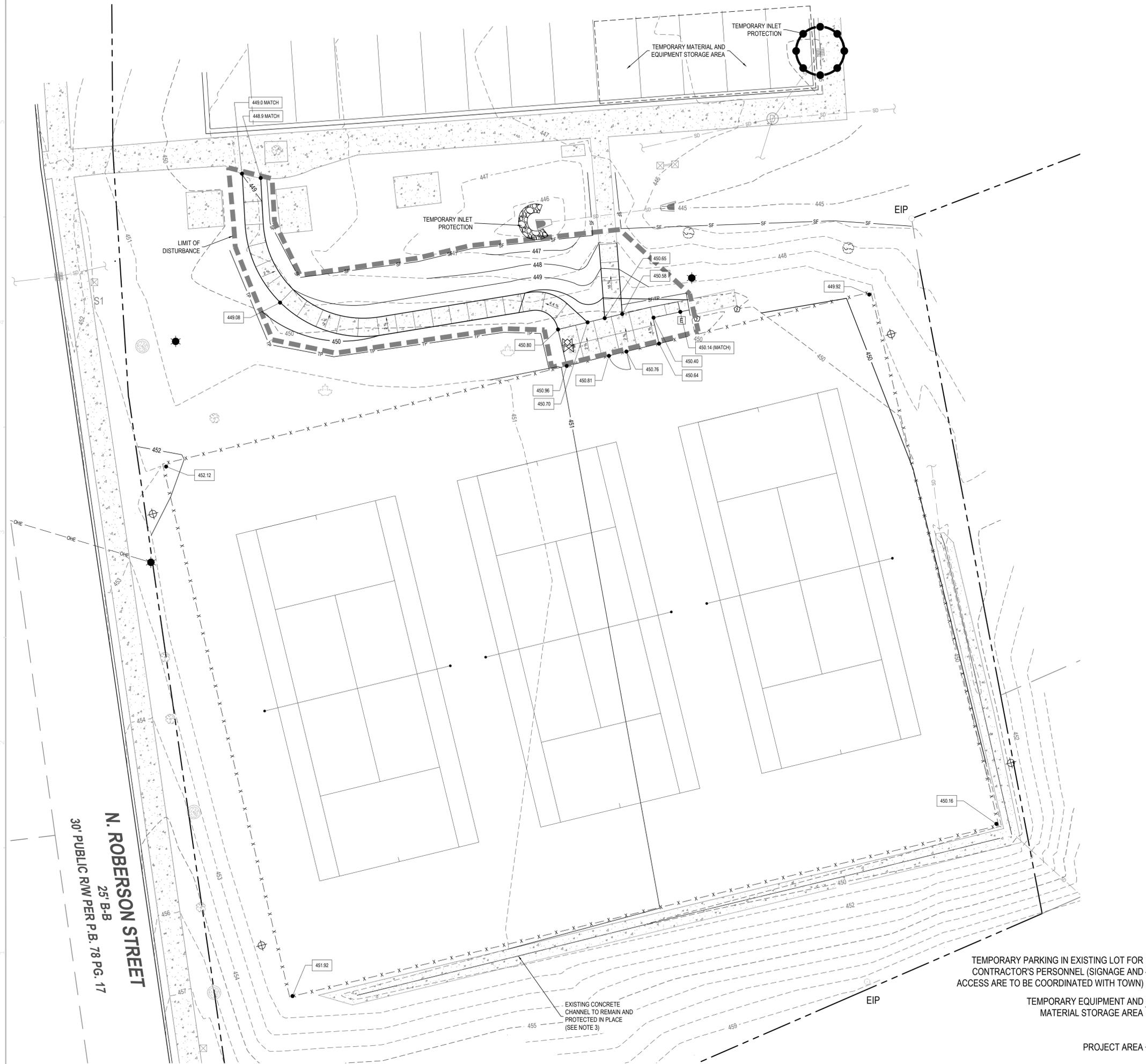
Professional Engineer Seal for David S. Greenberg, License No. 9808, State of North Carolina, expires 12/31/2023.

David S. Greenberg 9/8/2022
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 SCALE: 1 inch = 10 ft

INITIAL PLAN DATE: 09/09/2022
 REVISIONS:

WR Job No. 210898.01	DATE 09/09/2022
DRN: WR	DGN: WR
CKD: WR	

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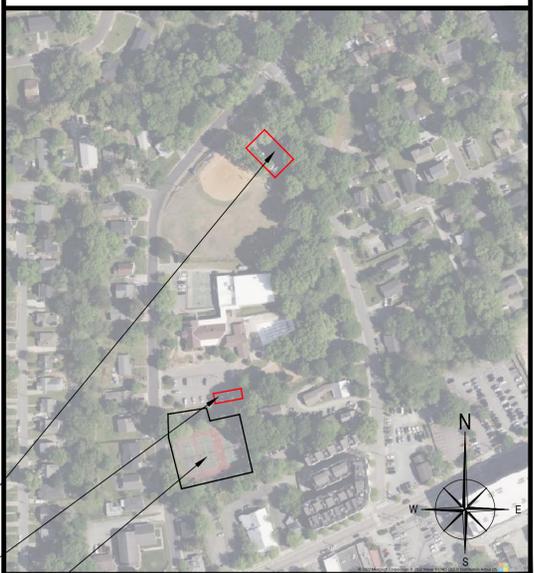


GRADING & DRAINAGE LEGEND:

SYMBOL	DESCRIPTION
--- (dashed line)	EXISTING CONTOUR MINOR
--- (dashed line)	EXISTING CONTOUR MAJOR
— (solid line)	PROPOSED CONTOUR MINOR
— (solid line)	PROPOSED CONTOUR MAJOR
— (line with 'SF')	SILT FENCE
— (line with 'TP')	TREE PROTECTION FENCE
⊗ (circle with cross)	EXISTING TREE
⊕ (circle with cross)	PROPOSED TENNIS COURT LIGHT
- - - - - (dashed line)	LIMIT OF DISTURBANCE
— (line with 'SF/TP')	COMBINATION TEMPORARY SILT / TREE PROTECTION FENCE

- DRAWING NOTES:**
- TENNIS COURT SURFACING IS TO BE INSTALLED ON TOP OF EXISTING ASPHALT SURFACE. NEW GRADES WILL BE MINIMUM 2" HIGHER THAN EXISTING GRADES.
 - NEW ASPHALT IS TO EXTEND TO FENCE LINE, AND TAPER TO MEET EXISTING GRADE.
 - EXISTING CONCRETE CHANNEL IS TO REMAIN AND PROTECTED IN PLACE. NEW ASPHALT SURFACING IS TO TRANSITION TO MEET FLUSH WITH THE EDGE OF THE CONCRETE CHANNEL.*

VICINITY MAP: STAGING & PARKING
SCALE: 1"=200'



TEMPORARY PARKING IN EXISTING LOT FOR CONTRACTOR'S PERSONNEL (SIGNAGE AND ACCESS ARE TO BE COORDINATED WITH TOWN)

TEMPORARY EQUIPMENT AND MATERIAL STORAGE AREA

EXISTING CONCRETE CHANNEL TO REMAIN AND PROTECTED IN PLACE (SEE NOTE 3)

PROJECT AREA

CONSTRUCTION PLANS
CHAPEL HILL HARGRAVES PARK
TENNIS COURT RENOVATION

216 N ROBERSON ST | CHAPEL HILL, NC 27516 | ORANGE COUNTY



DocuSigned by:
David S. Greenberg 9/8/2022

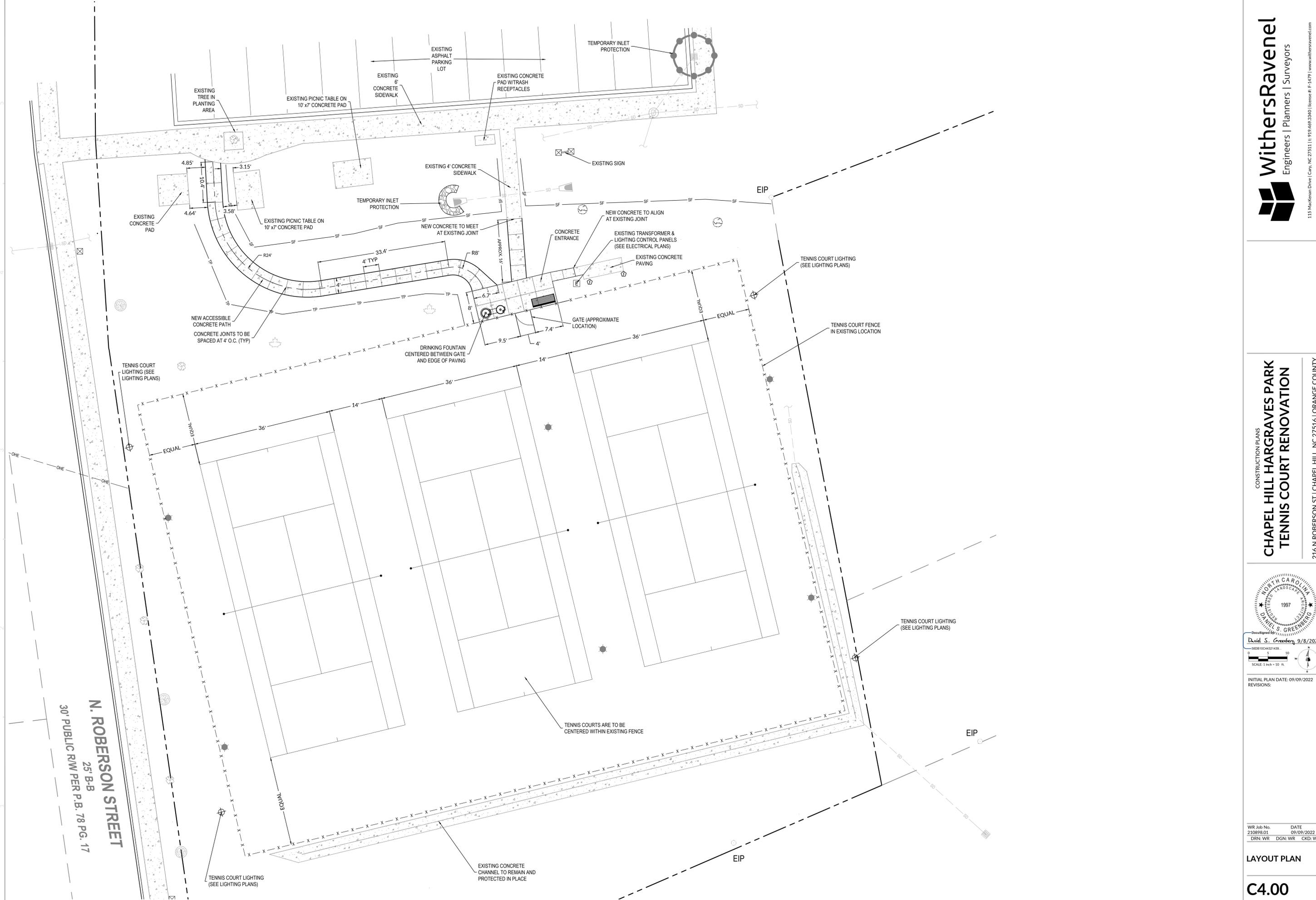
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INITIAL PLAN DATE: 09/09/2022
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WR Job No. DATE
210898.01 09/09/2022
DRN: WR DGN: WR CKD: WR

GRADING & EROSION CONTROL PLAN

C3.00



u:\21151_091925\2087603 - Chapel Hill Hargraves park tennis court\plan\CD\drawing.dwg (last modified: 09/09/2022 12:45:11 AM) - DCSBENR01G

N. ROBERSON STREET
25' B-B
30' PUBLIC R/W PER P.B. 78 PG. 17



David S. Greenberg 9/8/2022

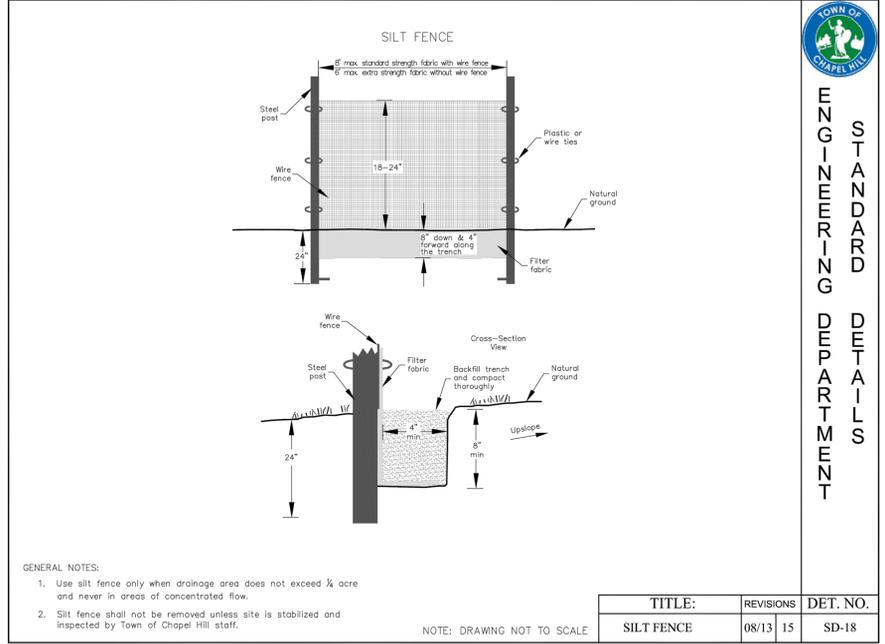


INITIAL PLAN DATE: 09/09/2022
REVISIONS:

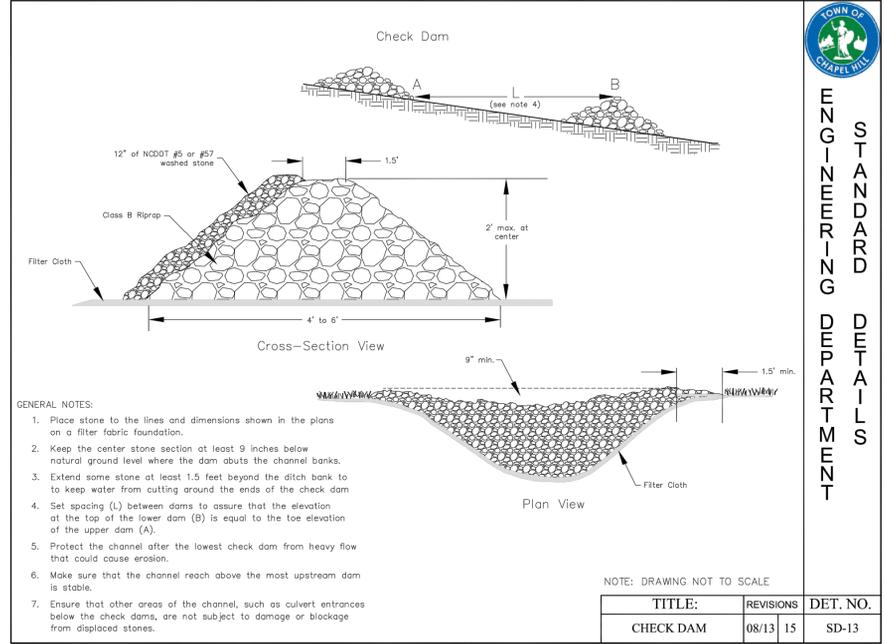
WR Job No.	DATE
210898.01	09/09/2022
DRN: WR	DGN: WR
	CKD: WR

LAYOUT PLAN

C4.00



TOWN OF CHAPEL HILL
ENGINEERING DEPARTMENT
STANDARD DETAILS



TOWN OF CHAPEL HILL
ENGINEERING DEPARTMENT
STANDARD DETAILS

u:\21151_081925\2087600 - Chapel Hill Hargraves Park Tennis Court Renovation\GIS\DWG\DWG\DWG.dwg, 2022-12-06 09:44 AM, DCSHENBERG

David S. Greenberg 9/8/2022
082619C44321439...

INITIAL PLAN DATE: 09/09/2022
REVISIONS:

WR Job No. 210898.01	DATE 09/09/2022
DRN: WR	DGN: WR
CKD: WR	

SITE DETAILS

C5.02

CH3 Hargraves Park Retrofit

Chapel Hill, NC

Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
P1-P4	50'	50'	1	TLC-LED-600	0.58 kW	A
		50'	2	TLC-LED-900	1.78 kW	A
4			12		9.44 kW	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Tennis	9.44 kW	12

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	8
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	4

Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Spill/Glare - Residential	Horizontal Illuminance	0	0	0.02	0.00		A	12
Spill/Glare - Residential	Max Candela (by Fixture)	453	0	1524	0.00		A	12
Spill/Glare - Residential	Max Vertical Illuminance Metric	0.01	0	0.05	0.00		A	12
Tennis 1	Horizontal Illuminance	51	30	65	2.20	1.70	A	12
Tennis 1	Max Vert Illuminance (by Light Bank)	59.8	29	86	2.95	2.06	A	12
Tennis 2	Horizontal Illuminance	45.2	29	55	1.92	1.56	A	12
Tennis 2	Max Vert Illuminance (by Light Bank)	57.1	30	79	2.58	1.90	A	12
Tennis 3	Horizontal Illuminance	50.5	29	67	2.33	1.74	A	12
Tennis 3	Max Vert Illuminance (by Light Bank)	59.6	29	85	2.98	2.06	A	12

From Hometown to Professional



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EQUIPMENT LIST FOR AREAS SHOWN							
Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1
				49'	TLC-LED-900	2	2
4	TOTALS					12	12

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 1
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

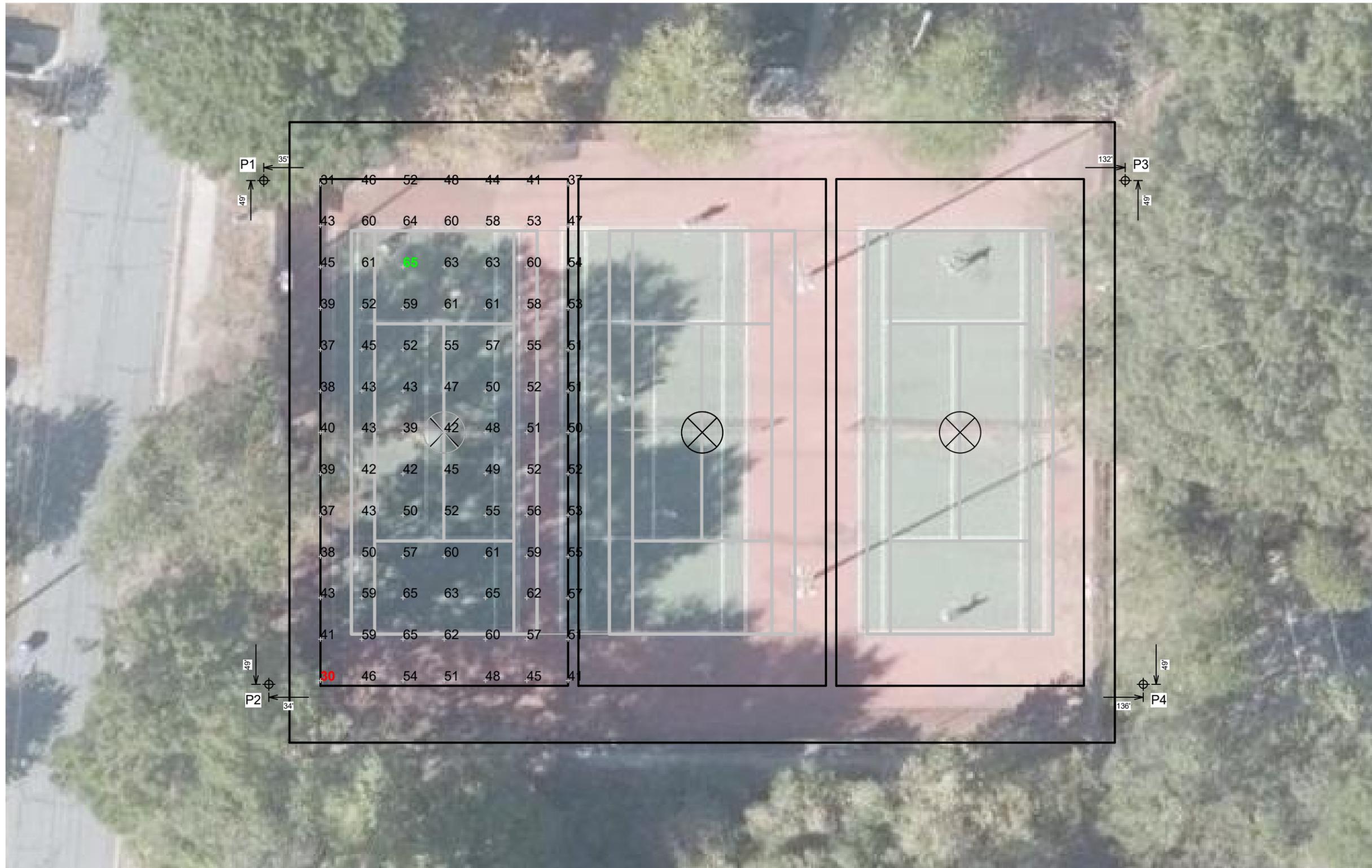
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Guaranteed Average:	45
Scan Average:	50.98
Maximum:	65
Minimum:	30
Avg / Min:	1.73
Guaranteed Max / Min:	2.5
Max / Min:	2.20
UG (adjacent pts):	1.55
CU:	0.30
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1	0
				49'	TLC-LED-900	2	2	0
4	TOTALS					12	12	0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 1
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

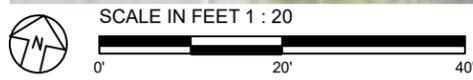
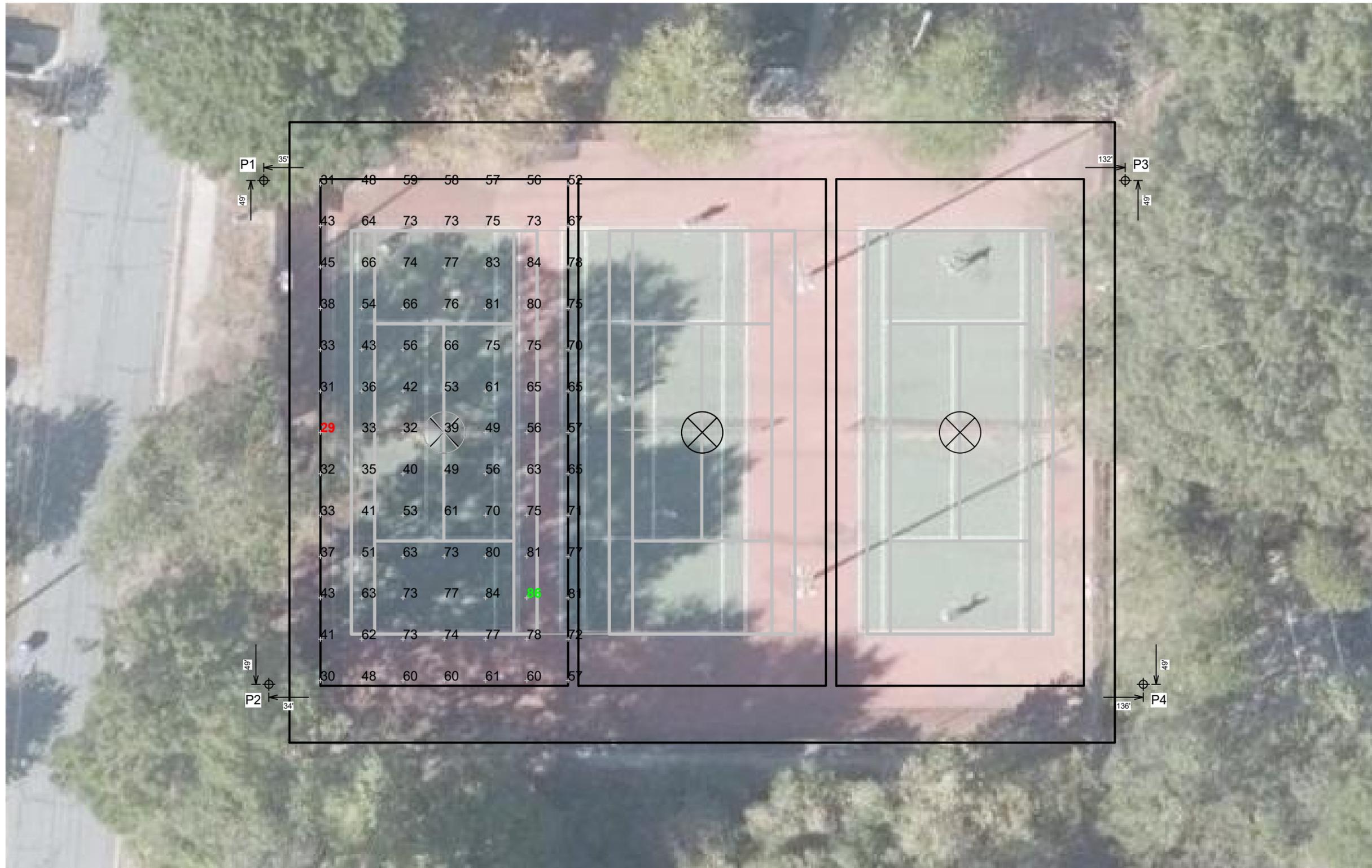
ILLUMINATION SUMMARY	
MAINTAINED MAX VERTICAL FOOTCANDLES	
Entire Grid	
Scan Average:	59.75
Maximum:	86
Minimum:	29
Avg / Min:	2.05
Max / Min:	2.95
UG (adjacent pts):	1.62
CU:	0.30
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



EQUIPMENT LIST FOR AREAS SHOWN							
Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1
				49'	TLC-LED-900	2	2
4	TOTALS					12	12

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 2
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

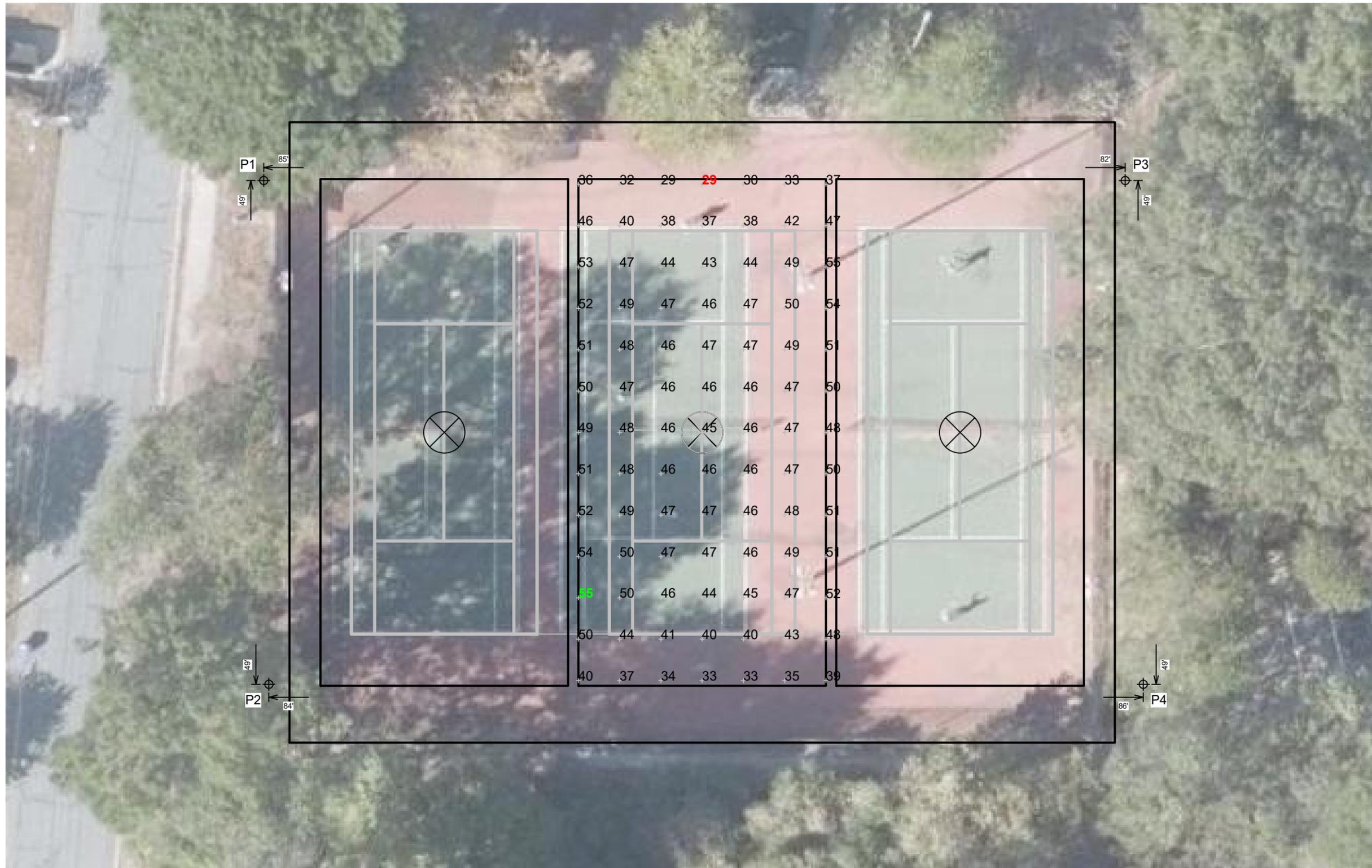
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	45
Scan Average:	45.16
Maximum:	55
Minimum:	29
Avg / Min:	1.57
Guaranteed Max / Min:	2.5
Max / Min:	1.92
UG (adjacent pts):	1.29
CU:	0.26
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

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EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1	0
				49'	TLC-LED-900	2	2	0
4	TOTALS					12	12	0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 2
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

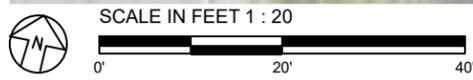
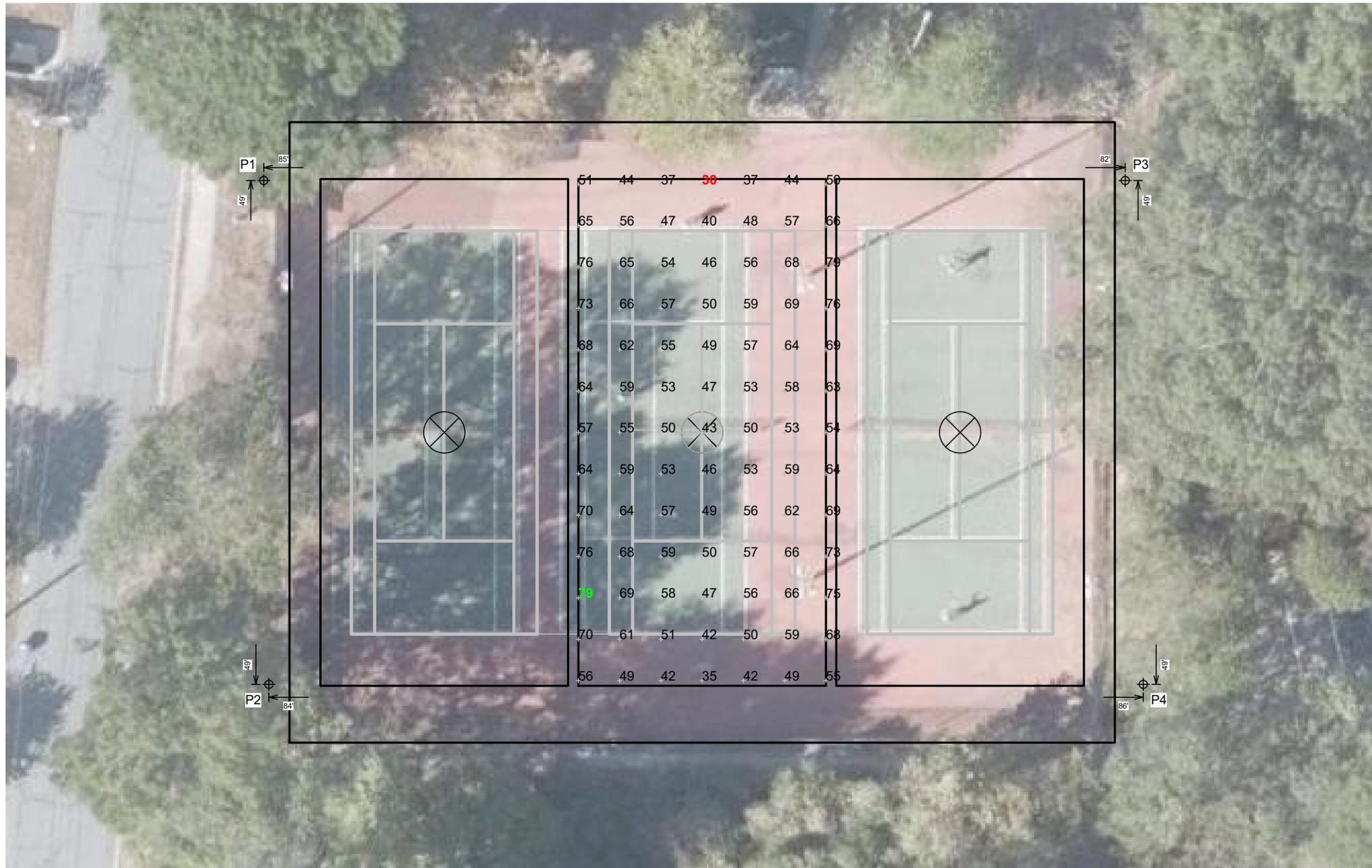
ILLUMINATION SUMMARY	
MAINTAINED MAX VERTICAL FOOTCANDLES	
Entire Grid	
Scan Average:	57.14
Maximum:	79
Minimum:	30
Avg / Min:	1.87
Max / Min:	2.58
UG (adjacent pts):	1.30
CU:	0.26
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1	0	
				49'	TLC-LED-900	2	2	0	
4	TOTALS						12	12	0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 3
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	45
Scan Average:	50.51
Maximum:	67
Minimum:	29
Avg / Min:	1.76
Guaranteed Max / Min:	2.5
Max / Min:	2.33
UG (adjacent pts):	1.53
CU:	0.30
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



EQUIPMENT LIST FOR AREAS SHOWN							
Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID / OTHER GRIDS
4	P1-P4	50'	-1'	49'	TLC-LED-600	1	1 0
				49'	TLC-LED-900	2	2 0
4	TOTALS					12	12 0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Tennis 3
Size:	48' x 98'
Spacing:	8.0' x 8.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED MAX VERTICAL FOOTCANDLES	
Entire Grid	
Scan Average:	59.63
Maximum:	85
Minimum:	29
Avg / Min:	2.08
Max / Min:	2.98
UG (adjacent pts):	1.58
CU:	0.30
No. of Points:	91
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW



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EQUIPMENT LIST FOR AREAS SHOWN								
Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	P1-P4	50'	-	50'	TLC-LED-600	1	1	0
				50'	TLC-LED-900	2	2	0
4	TOTALS					12	12	0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Spill/Glare - Residential
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
CANDELA (PER FIXTURE)	
Scan Average:	Entire Grid 452.5384
Maximum:	1524.10
Minimum:	0.00
No. of Points:	21
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

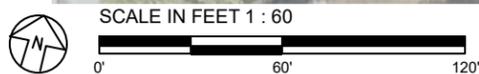


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Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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EQUIPMENT LIST FOR AREAS SHOWN								
Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	P1-P4	50'	-	50'	TLC-LED-600	1	1	0
				50'	TLC-LED-900	2	2	0
4	TOTALS					12	12	0

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Spill/Glare - Residential
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Scan Average:	Entire Grid 0.0039
Maximum:	0.02
Minimum:	0.00
No. of Points:	21
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW

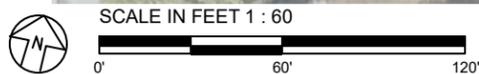


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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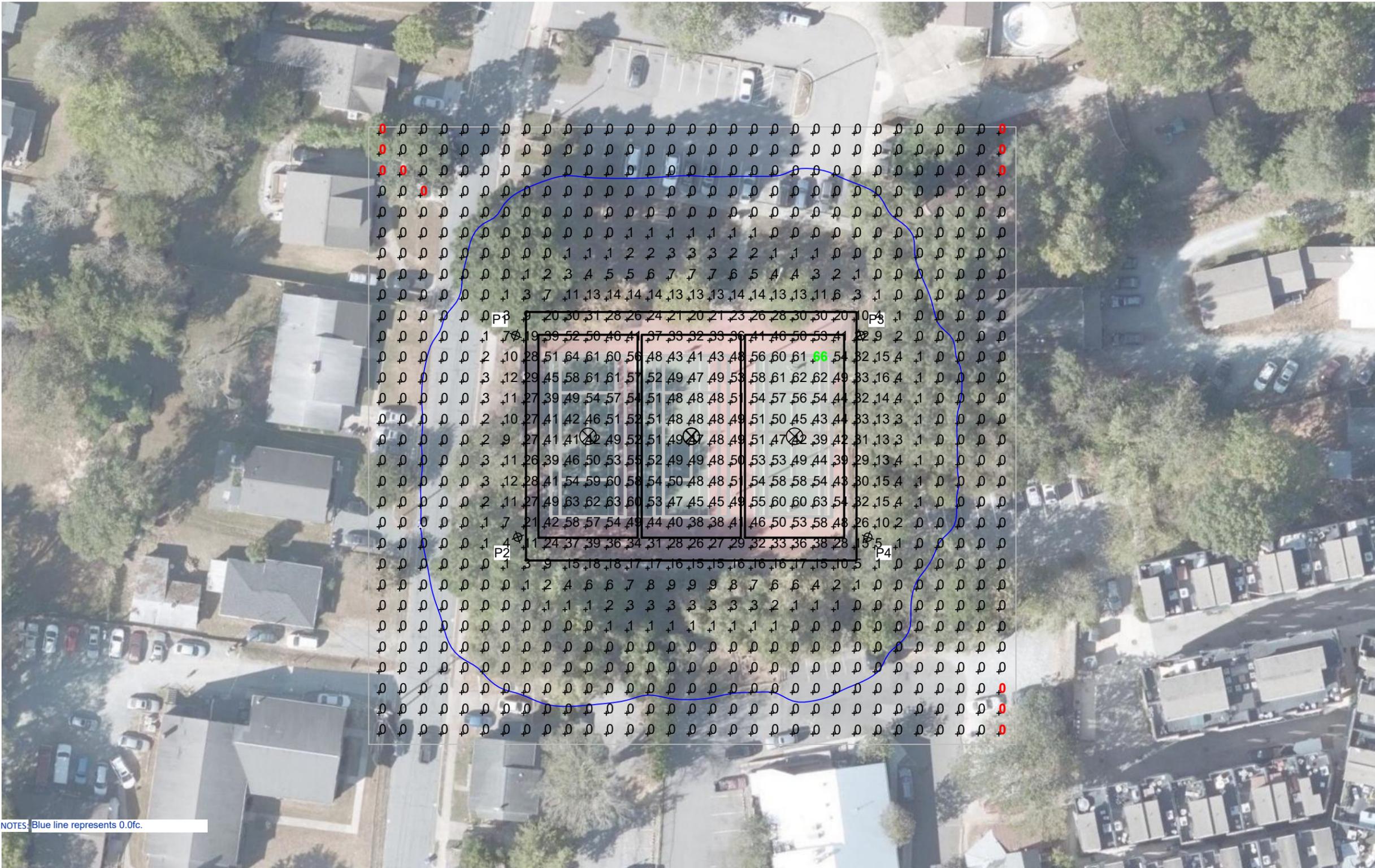
EQUIPMENT LIST FOR AREAS SHOWN							
Pole			Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID
4	P1-P4	50'	-	50'	TLC-LED-600	1	1
0				50'	TLC-LED-900	2	2
4	TOTALS					12	12

CH3 Hargraves Park Retrofit

Chapel Hill, NC

GRID SUMMARY	
Name:	Zero Grid
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average:	10.71
Maximum:	66
Minimum:	0
Avg / Min:	-
Max / Min:	-
UG (adjacent pts):	131.38
CU:	1.00
No. of Points:	930
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	12
Total Load:	9.44 kW



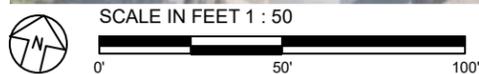
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

NOTES: Blue line represents 0.0fc.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



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CH3 Hargraves Park Retrofit

Chapel Hill, NC

EQUIPMENT LAYOUT

INCLUDES:

- Tennis
- Tennis 1
- Tennis 2
- Tennis 3

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

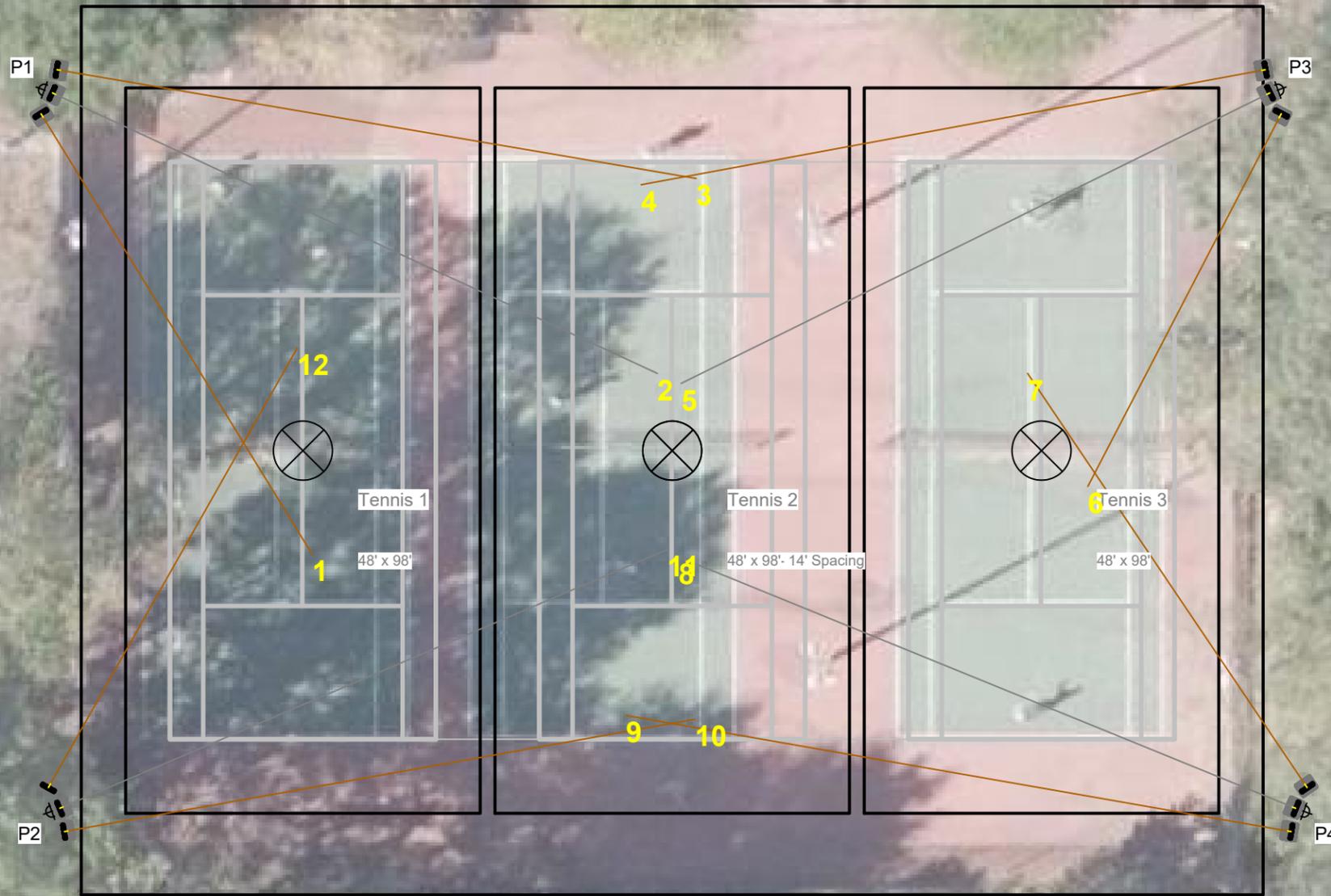
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	Pole		Luminaires		QTY / POLE
		CLASS	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	
4	P1-P4	LSS50AB	-	50'	TLC-LED-600	1
				50'	TLC-LED-900	2
4	TOTALS					12

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)
Single Phase Voltage						
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9



ENGINEERED DESIGN By: Logan Schlee · File #202253A_R1 · 07-Sep-22

Pole location(s) ⚡ dimensions are relative to 0,0 reference point(s) ⊗



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ELECTRICAL SPECIFICATIONS

GENERAL REQUIREMENTS

GENERAL CONDITIONS OF THE CONTRACT, SUPPLEMENTAL GENERAL CONDITIONS, AND INSTRUCTIONS TO BIDDERS ARE A PART OF THESE SPECIFICATIONS. REFER TO THESE DOCUMENTS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

THIS CONTRACTOR SHALL PAY ALL REQUIRED INSPECTION FEES AND SHALL INCLUDE THE COST OF SUCH FEES IN THE PROPOSAL.

PROVIDE INSURANCE, TEMPORARY UTILITIES, AND OTHER ITEMS AFFECTING THIS CONTRACT AS INDICATED IN THE GENERAL CONDITIONS OR AS DIRECTED BY THE OWNER.

BIDDERS ARE RESPONSIBLE FOR OBTAINING EACH ISSUED ADDENDA AND TO INCORPORATE THEM INTO THEIR PROPOSAL.

EACH BIDDER IS RESPONSIBLE FOR BIDDING ALTERNATES WHETHER LISTED OR NOT ON THE BID PROPOSAL FORM.

THIS CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OTHER CONTRACT DOCUMENTS FOR THE PROJECT INCLUDING OTHER TRADES' DRAWINGS, SPECIFICATIONS, AND SUBMITTALS. CONNECT AND PROVIDE SERVICES FOR EQUIPMENT AS SHOWN OR INDICATED.

THIS CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, EQUIPMENT, AND PERFORM ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM AS SPECIFIED HEREIN AND AS INDICATED ON THE DRAWINGS.

THE TERM "PROVIDE" USED THROUGHOUT THESE SPECIFICATIONS AND ON THE DRAWINGS SHALL MEAN TO FURNISH, INSTALL, AND CONNECT WITH ALL RELATED HARDWARE, SOFTWARE, AND ACCESSORIES FOR A COMPLETE INSTALLATION READY FOR USE.

MODIFICATIONS: MINOR CHANGES IN OUTLET, LIGHT FIXTURE, AND EQUIPMENT LOCATIONS MAY BE MADE AT ANY TIME PRIOR TO ROUGHING-IN OF THE ELECTRICAL WORK WITHOUT ANY ADDITIONAL COST TO THE OWNER.

NOTIFY INSPECTORS: THIS CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ELECTRICAL INSPECTOR, FIRE MARSHAL, AUTHORITY HAVING JURISDICTION, AND THE ENGINEER TO SCHEDULE REQUIRED INSPECTIONS.

SITE CONDITIONS: IT SHALL BE THE DUTY OF THE PROSPECTIVE CONTRACTOR TO VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE PROJECT CONDITIONS PRIOR TO BID. EVIDENT JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. DIRECT ANY QUESTIONS TO THE ENGINEER A MINIMUM OF 10 DAYS PRIOR TO BID.

CONTRACT SUPERVISOR: THE CONTRACTOR SHALL ASSIGN AND MAINTAIN A SINGLE QUALIFIED PERSON AS THE JOB SUPERINTENDENT ON THIS PROJECT.

QUALIFIED PERSONNEL: THE CONTRACTOR SHALL PROVIDE ADEQUATE MANPOWER AS REQUIRED TO MEET THE SCHEDULE. THIS INCLUDES QUALIFIED ELECTRICIANS AND MECHANICS THAT ARE LICENSED BY THE PROPER AUTHORITIES AND SKILLED IN THE INSTALLATION OF THIS TYPE OF WORK. WORKMANSHIP SHALL BE OF THE HIGHEST GRADE AND FIRST CLASS IN EVERY RESPECT.

ARRANGE WORK TO AVOID CUTTING THE WORK OF OTHER TRADES. WHERE CUTTING IS UNAVOIDABLE, COORDINATE WITH THE OTHER TRADE(S) FIRST. REPAIR WORK TO MATCH.

TO AVOID WEAKENING THE STRUCTURE, DO NOT CUT STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR.

FURNISH, PLACE AND GROUT NEATLY IN PLACE PIPE SLEEVES FOR ELECTRICAL WORK IN NEW WALLS AND PARTITIONS.

SEAL AIRTIGHT AROUND ALL CONDUITS, CABLES, BOXES, ETC. THAT ARE RUN THRU ALL NEW WALLS, PARTITIONS, AND CEILINGS. USE FIRE BARRIER CAULK AND/OR PUTTY AS APPLICABLE AROUND PENETRATIONS THRU FIRE-RATED WALLS, PARTITIONS, CEILING, ETC. ACCORDING TO LISTED UL ASSEMBLY SYSTEM DETAILS FOUND AT WWW.UUL.COM.

ELECTRICAL AND OTHER EQUIPMENT AND/OR MATERIALS THAT ARE DEFECTIVE, OR THAT ARE DAMAGED IN THE COURSE OF CONSTRUCTION, SHALL BE REMOVED AND REPLACED BY THIS CONTRACTOR AT THIS CONTRACTOR'S EXPENSE.

DEPARTURES AND/OR DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS SHALL BE REQUESTED IN WRITING BY THE CONTRACTOR FROM THE ENGINEER. DEPARTURES AND/OR DEVIATIONS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

SUBMITTALS:

SUBMIT ELECTRONIC COPY OF SUBMITTAL DATA FOR ALL MATERIALS AND EQUIPMENT THAT ARE TO BE INSTALLED ON THIS PROJECT. UPON APPROVAL BY THE ENGINEER, ELECTRONIC COPY WILL BE RETURNED.

PRIOR TO SUBMITTING INFORMATION, THE CONTRACTOR SHALL REVIEW INFORMATION TO ENSURE IT COMPLIES WITH THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES. THE CONTRACTOR SHALL NOT SUBMIT DATA UNTIL IT COMPLIES.

STAMP ALL SUBMITTAL DATA AND SHOP DRAWINGS AS "APPROVED" ONCE THE DATA COMPLIES INDICATING FULL COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. SHOP DRAWINGS AND SUBMITTAL DATA WILL NOT BE REVIEWED WITHOUT THE "APPROVED" STAMP.

SUBMITTAL DATA AND SHOP DRAWINGS SHALL CLEARLY INDICATE WHICH PIECES OF EQUIPMENT ARE TO BE INSTALLED FOR THIS PROJECT. DATA SHALL INCLUDE EQUIPMENT SIZES, CAPACITIES, REQUIREMENTS FOR ACCESS AND MAINTENANCE, MINIMUM CLEARANCES AS REQUIRED BY THE MANUFACTURER AND CODE, AND ALL OTHER PERTINENT INFORMATION FOR THIS PARTICULAR PROJECT. ALL SHOP DRAWINGS SHALL BE SUBMITTED AT THE SAME TIME AND AS SOON AS POSSIBLE AFTER AWARD OF CONTRACT.

MATERIALS AND EQUIPMENT SHALL NOT BE PLACED ON THE JOB SITE, OR INSTALLED, WITHOUT PRIOR APPROVAL BY THE ENGINEER.

RECORD DRAWINGS:

THIS CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS THROUGHOUT CONSTRUCTION AND SHALL UPDATE THEM DAILY.

MARK THE DRAWINGS WITH ALL DEVIATIONS SHOWING THE AS-BUILT CONDITIONS. INCLUDE REVISIONS TO ALL SCHEDULES AS WELL AS REVISED LOCATIONS OF ALL DEVICES, CONDUITS, PANELBOARDS, EQUIPMENT, BOXES, WALLS, ETC. ...

SUBMIT 2 COPIES OF THE MARKED UP RECORD DRAWINGS SHOWING THE AS-BUILT CONDITIONS TO THE ENGINEER WHEN CONSTRUCTION IS COMPLETE OR AS DIRECTED BY THE ENGINEER.

CODES AND STANDARDS:

THE ENTIRE INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS, LAWS, ORDINANCES, REGULATIONS, THE NATIONAL ELECTRICAL CODE, REFERENCED STANDARDS, THE OWNER'S GUIDELINES, AND THE NORTH CAROLINA STATE BUILDING CODE, AND OTHER CODES APPLICABLE TO THIS PROJECT. EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AS REQUIRED BY THE NEC.

MATERIALS INSTALLED IN THIS CONTRACT SHALL CONFORM TO THE STANDARDS LISTED BELOW WHERE SUCH STANDARDS ARE APPLICABLE AND SHALL BE NEW AND FIRST CLASS IN ALL RESPECTS.

AEIC	AMERICAN ASSOCIATION OF EDISON ILLUMINATING COMPANIES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE STANDARDS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASHRAE/IES	90.1 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS
BOCA	BUILDING OFFICIALS CODE ADMINISTRATORS CERTIFIED BULKHEAD MANUFACTURERS STANDARDS
CBM	
EEL	EDISON ELECTRICAL INSTITUTE
ETL	ELECTRICAL TESTING LABORATORIES STANDARDS
ICEA	INSULATED CABLE ENGINEERS ASSOCIATION
ICC	INTERNATIONAL CODE COUNCIL
IOBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
NCCM	NORTH CAROLINA CONSTRUCTION MANUAL WITH GENERAL STATUTES
NCSBC	NORTH CAROLINA STATE BUILDING CODE
NEC	NATIONAL ELECTRICAL CODE
NECA	NATIONAL ELECTRICAL CONTRACTOR ASSOCIATION
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NEIS	NATIONAL ELECTRICAL INSTALLATION STANDARDS
UL	UNDERWRITER'S LABORATORIES, INC.
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
SBCCI	SOUTHERN BUILDING CODE CONGRESS
INTL	INTERNATIONAL TOXICITY CHARACTERISTIC LEACHING PROCEDURE

ELECTRICAL DEMOLITION:

DISCONNECT AND REMOVE EXISTING EQUIPMENT AND/OR DEVICES AS INDICATED ON THE DRAWINGS OR AS REQUIRED TO ACCOMMODATE CONSTRUCTION. REMOVE CONDUCTORS IN CONDUIT COMPLETELY BACK TO THE SOURCE WITHOUT CREATING ADDITIONAL DEMOLITION OR REPAIR WORK FOR OTHER TRADES.

WHEN EXISTING CIRCUITS ARE INTERRUPTED BY DEMOLITION THAT ARE TO REMAIN IN SERVICE, REWORK AND REINSTALL CIRCUITS AS REQUIRED.

TURN ANY DESIRED MATERIAL OVER TO THE OWNER AS DIRECTED. REMOVE AND DISPOSE OF MATERIAL ACCORDING TO APPLICABLE LAW THAT IS NOT TO BE TURNED OVER TO THE OWNER.

PATCH SURFACES TO MATCH AND PROVIDE COVER PLATES WHERE BOXES REMAIN AND ARE MADE SPARE.

WIRING METHODS:

RUN ALL WIRING FOR LIGHTING, POWER AND ALL OTHER SYSTEMS, BELOW SLAB ON GRADE AND UNDERGROUND IN SCHEDULE 40 PVC CONDUIT WITH PVC ASPHALT COATED RIGID GALVANIZED ELBOWS, AND WITH GROUND WIRE AND WITH ALL THREADED CONNECTIONS AND JOINTS WATERPROOFED FOR WATERTIGHT INSTALLATION. RUN ALL WIRING FOR LIGHTING, POWER AND ALL OTHER SYSTEMS ABOVE SLAB ON GRADE AND OVERHEAD IN GRC CONDUIT WITH THREADED TYPE FITTINGS.

FOR CONNECTIONS TO MOTORS USE LIQUID TIGHT FLEXIBLE CONDUIT.

PROVIDE NEW TYPED CIRCUIT INDEX FOR ALL NEW AND EXISTING PANELS AND EQUIPMENT, SHOWING ALL CIRCUIT DESIGNATIONS, INCLUDING ROOM NAMES, EQUIPMENT AND AREAS SERVED.

PROVIDE PROPER GROUNDING FOR ALL RECEPTACLES, LIGHTS, EQUIPMENT, ETC. AS REQUIRED TO COMPLY WITH ARTICLE 250 OF THE LATEST NEC. PROVIDE SEPARATE INSULATED GREEN GROUNDING CONDUCTOR FOR EACH NEW LIGHT, RECEPTACLE AND PIECE OF EQUIPMENT INSIDE THE BUILDING. SIZES OF CONDUCTORS SHALL BE AS SHOWN, BUT SHALL NOT BE SMALLER THAN #12. IF NOT INDICATED, SIZE IN ACCORDANCE WITH CODE.

ALL WIRING DEVICES SHALL BE PERMANENTLY AND SECURELY CONNECTED TO THE ENCLOSURE AND BUILDING GROUNDING SYSTEM IN WHICH THEY ARE MOUNTED WITH A COPPER GROUNDING JUMPER.

ALL WIRING SHALL BE COPPER WITH THHN/THWN INSULATION. TEMPERATURE RATING OF WIRE INSULATION SHALL NOT EXCEED THE TEMPERATURE RATING OF CIRCUIT BREAKERS, LUGS, CONNECTORS, ETC. IF WIRE WITH HIGHER TEMPERATURE RATING IS USED, IT SHALL BE DERATED TO THE TEMPERATURE RATING OF EQUIPMENT TO WHICH IT IS CONNECTED.

WIRE MARKERS AROUND THE CONDUCTOR SHALL BE NON-METALLIC PERMANENT TYPE AS MANUFACTURED BY W.H. BRADY OR APPROVED EQUAL.

SPlicing (CIRCUITS OF 600 VOLTS OR LESS): SOLID CONDUCTORS, NAMELY #10 AWG COPPER AND SMALLER, SHALL BE SPLICED BY USE OF IDEAL "WIRE-NUTS", 3M CO.'S "SCOTCHLOK", OR T&B "PIGGY" CONNECTORS, "STA-KON" OR OTHER PERMANENT TYPE CRIMP CONNECTORS SHALL NOT BE USED.

STRANDED CONDUCTORS, NAMELY #8 AWG AND LARGER, SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS PLUS GUM TAPE, PLUS FRICTION OR PLASTIC TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS PROVIDED WITH UL APPROVED INSULATING COVERS MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE.

CONDUCTORS IN ALL CASES SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS AND GUTTERS.

ALL WIRES, CABLES, ETC. SHALL BE APPROVED BY THE UNDERWRITER'S LABORATORIES, INC.

ALL BRANCH CIRCUIT CONDUCTORS SHALL BE FACTORY COLOR CODED AND ALL OTHER CONDUCTORS SHALL BE COLOR-TAPED IN LIKE MANNER THROUGHOUT THE BUILDING TO INDICATE VARIOUS PHASES AND NEUTRAL.

COLOR CODING FOR CONDUCTORS SHALL MATCH EXACTLY THE COLORING OF EXISTING SYSTEMS. IN GENERAL THE COLOR CODING FOR SYSTEMS OF LESS THAN 150 VOLT TO GROUND SHALL BE BLACK-RED-BLUE FOR PHASES A-B-C RESPECTIVELY, WHITE FOR GROUNDED NEUTRAL AND GREEN FOR EQUIPMENT GROUNDING.

FLUSH MOUNTED GROUNDING TYPE CONVENIENCE OUTLETS SHALL BE SOLIDLY GROUNDED TO METAL CONDUIT SYSTEM AND BUILDING GROUNDING SYSTEM WITH GROUNDING SCREW AND GREEN COLORED INSULATED CONDUCTOR. ELECTRICAL CONNECTIONS SHALL BE MADE FROM GROUNDING SCREW TO HEX-NUT ON CONVENIENCE OUTLET WITH GREEN COLORED CONDUCTOR.

OUTLET BOXES FOR EXPOSED OR SURFACE MOUNTED WORK SHALL BE CAST TYPE FD WITH MATCHING DEVICE PLATE, OF SAME MANUFACTURER AS THE BOX, AND MATCHING THE OUTLINE OF THE BOX.

LIGHTING:

LIGHTING FIXTURES SHALL BE AS SCHEDULED ON THE DRAWINGS BY OTHERS.

PAINTING AND FINISHING:

CLEAN ALL CONDUITS, HANGERS, SUPPORTS, PANELS, DEVICES, LIGHTS, AND OTHER ELECTRICAL EQUIPMENT.

WHERE INSTALLED IN FINISHED AREAS, EXPOSED EQUIPMENT, RACEWAYS, PANEL COVERS, ETC., SHALL BE SUPPLIED WITH A PRIME COAT, AND SHALL BE PROFESSIONALLY PAINTED OR ENAMELED AS DIRECTED TO MATCH OR BLEND WITH ADJACENT SURFACES.

ALL FINISHING SHALL BE AS DIRECTED BY AND SATISFACTORY TO THE OWNER'S REPRESENTATIVE.

TOUCH UP ALL DAMAGED AND SCRATCHED SURFACES ON FACTORY FINISHED EQUIPMENT AND MATERIALS WITH PAINT OF SAME TYPE AND COLOR.

TESTING:

ALL TESTS SHALL BE DOCUMENTED INDICATING THE TIME OF DAY, DATE, TEMPERATURE, AND ALL PERTINENT TEST INFORMATION. SUBMIT TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

1. TEST ALL CURRENT CARRYING PHASE CONDUCTORS AND NEUTRALS BEFORE CONNECTIONS ARE MADE FOR INSULATION RESISTANCE AND ACCIDENTAL GROUNDS. THIS SHALL BE DONE WITH A 500 VOLT MEGGER. MINIMUM READINGS SHALL BE:

1. 1,000,000 OHMS OR MORE OHMS FOR #6 AWG WIRE AND SMALLER.
1. 250,000 OHMS OR MORE FOR #4 AWG OR LARGER, BETWEEN CONDUCTORS AND BETWEEN CONDUCTORS AND THE GROUNDING CONDUCTOR.

2. AFTER EQUIPMENT, FIXTURES, AND DEVICES ARE INSTALLED AND CONNECTIONS ARE COMPLETE TO EACH PANEL, DISCONNECT THE NEUTRAL FEEDER CONDUCTOR FROM THE NEUTRAL BAR AND TAKE A MEGGER READING BETWEEN THE NEUTRAL BAR AND THE GROUNDED ENCLOSURE. THE MINIMUM READING SHALL BE:

- 2.A. 250,000 OHMS OR MORE.
- 2.B. IF THE READING IS 250,000 OHMS OR LESS, DISCONNECT THE BRANCH CIRCUIT NEUTRAL CONDUCTORS FROM THE NEUTRAL BAR AND TEST EACH ONE SEPARATELY. CORRECT ANY ISSUES, RECONNECT, AND RETEST UNTIL 250,000 OHMS OR MORE CAN BE ACHIEVED.

GROUND SYSTEM:

3. AFTER THE ELECTRICAL GROUNDING SYSTEM HAS BEEN INSTALLED, TEST THE SYSTEM WITH A GROUND RESISTANCE TESTER. ADD ADDITIONAL GROUND BARS AS NEEDED AND CORRECT ANY ISSUES UNTIL THE RESISTANCE TO GROUND IS 25 OHMS OR LESS.

WARRANTY:

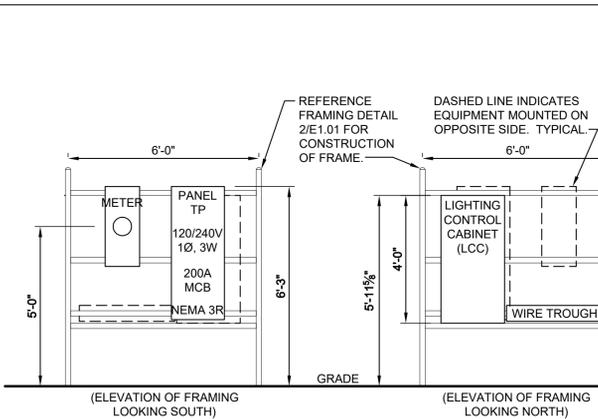
GUARANTEE ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR ONE YEAR. THE GUARANTEE PERIOD SHALL BE AS DEFINED IN THE CONTRACT AND SHALL BE AGREED UPON BY THE OWNER IN WRITING UPON COMPLETION OF THE WORK.

FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE, THIS CONTRACTOR SHALL REPLACE, WITHOUT ANY EXPENSE TO THE OWNER, ANY DEFECTIVE MATERIALS OR WORKMANSHIP. THIS INCLUDES CUTTING AND PATCHING WHICH MAY BE REQUIRED.

ELECTRICAL ABBREVIATIONS (NOTE 1)

A OR AMP	AMPERE	JB	JUNCTION BOX
ABV	ABOVE	KO	KNOCKOUT
AC	ALTERNATING CURRENT	KV	KILOVOLT
ACB	ABOVE COUNTER BACKSPLASH	KVA	KILOVOLT-AMPERE
AFD	ADJUSTABLE FREQUENCY DRIVE	KVAR	KILOVOLT-AMPERE REACTIVE
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AIC	AMPERES INTERRUPTING CAPACITY	KWH	KILOWATT-HOUR
AL	ALUMINUM	LA	LIGHTNING ARRESTER
AM	AMMETER	LC	LOADCENTER
AMPL	AMPLIFIER	LPS	LOW PRESSURE SODIUM
ASYM	ASYMMETRICAL	LTG	LIGHTING
ATS	AUTOMATIC TRANSFER SWITCH	LUM	LUMENS
AWG	AMERICAN WIRE GAGE	MAG	MAGNETIC
BEL	BELOW	MAN	MANUAL
BD	BUS DUCT	MATV	MASTER ANTENNA TELEVISION
BRKR	BREAKER	MCB	MAIN CIRCUIT BREAKER
CA	CABLE	MCC	MOTOR CONTROL CENTER
CAB	CABINET	MCV	THOUSAND CIRCULAR MILS
CATV	COMMUNITY ANTENNA TELEVISION OR CABLE TELEVISION	MGR	MOTOR/GENERATOR
		MH	METAL HALIDE OR MOUNTING HEIGHT
CB	CIRCUIT BREAKER	MIN	MINIMUM
CCTV	CLOSED CIRCUIT TELEVISION	MLO	MAIN LUGS ONLY
CF	COMPACT FLUORESCENT	MOT	MOTOR OPERATED DAMPER
CKT	CIRCUIT	MOT	MOTOR
CLG	CEILING	MS	MAGNETIC STARTER
CND	CONDUIT	MTG	MOUNTED OR MOUNTING
CNTR	CENTER	MTR	METER
COMB	COMBINATION	MVR	MERCURY VAPOR
COND	CONDUCTOR	NEC	NATIONAL ELECTRICAL CODE
CONN	CONNECTION	NEUT	NEUTRAL
CONT	CONTACT	NFSS	NON-FUSIBLE SAFETY SWITCH
CT	CURRENT TRANSFORMER	NO	NUMBER
CTRL	CONTROL	OH	OVERHEAD
CU	COPPER	P	POLE
CW	COLD WATER	PB	PULL BOX OR PUSHBUTTON
DC	DIRECT CURRENT	PBS	PUSHBUTTON STATION
DISC	DISCONNECT	PERS	PERSONAL EMERGENCY RESPONSE SYSTEM
DIST	DISTRIBUTION	PH(Ø)	EMERGENCY
DR	DOOR RELEASE SERVICE	PNL	PANEL
E OR EMER	EMERGENCY	PNLBD	PANELBOARD
EC	EMPTY CONDUIT	PRI	PRIMARY
EC	EXISTING TO BE RELOCATED	PT	POTENTIAL TRANSFORMER
ELEC	ELECTRICAL	PVC	POLYVINYL CHLORIDE
EM	EXISTING TO BE REMOVED	PWR	POWER
EMN	EXISTING TO BE REMOVED AND NEW INSTALLED	QTY	QUANTITY
EMT	ELECTRICAL METALLIC TUBING	RECPT	RECEPTACLE
ENCL	ENCLOSURE	RSC	RIGID STEEL CONDUIT
ENG	ENGINE	SCC	SHORT CIRCUIT CURRENT
EP	EXPLOSIONPROOF EQUIPMENT	SDR	MOTOR OPERATED SMOKE DAMPER
EQUIP	EQUIPMENT	SEC	SECONDARY
ER	EXISTING TO REMAIN	SMR	SURFACE METAL RACEWAY
EWC	ELECTRIC WATER COOLER	SPD	SURGE PROTECTION DEVICE
EXIST	EXISTING	SPEAKR	SPEAKER
EX	EXTERIOR	SR	SURFACE RACEWAY
FA	FIRE ALARM	SS	SURGE SUPPRESSOR/ISOLATED GROUND
FACP	FIRE ALARM CONTROL PANEL	STR	STARTER
FDR	FEEDER	SW	SWITCH
FC	FOOTCANDLE	SWBD	SWITCHBOARD
FLUOR	FLUORESCENT	SWGR	SWITCHGEAR
FSS	FUSIBLE SAFETY SWITCH	SYM	SYMMETRICAL
FWE	FURNISHED WITH EQUIPMENT	S/N	SOLID NEUTRAL
FXTR	FIXTURE	TC	TIME CLOCK
GEN	GENERATOR	TEL	TELEPHONE
GF	GROUND FAULT	TGB	TELECOMMUNICATIONS GROUND BAR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TMGB	TELECOMMUNICATIONS MAIN GROUND BAR
GND	GROUND	TV	TELEVISION
H	HORIZONTAL	TYP	TYPICAL
HG	HOSPITAL GRADE	UF	UNDERFLOOR
HID	HIGH INTENSITY DISCHARGE	UG	UNDERGROUND
HOA	HAND-OFF-AUTOMATIC	UL	UNDERWRITER'S LABORATORIES
HOA	HORSEPOWER OR HEAT PUMP	UNO	UNLESS NOTED OTHERWISE
HPF	HIGH POWER FACTOR	V	VOLT
HPS	HIGH PRESSURE SODIUM	VA	VOLT-AMPERE
HTR	HEATER	VAR	VOLT-AMPERE REACTIVE
HW	HOT WATER	VM	VOLTMETER
HZ	HERTZ	W	WATT OR WIRE
IC	INTERCOM OR INTERRUPTING CAPACITY	WP	WEATHERPROOF
IG	ISOLATED GROUND	XFER	TRANSFER
IMC	INTERMEDIATE METAL CONDUIT	XFMR	TRANSFORMER
INC	INCANDESCENT		
INIT	INITIAL		

NOTES (ELECTRICAL ABBREVIATIONS):
1. REFER TO OTHER ABBREVIATION LISTS ELSEWHERE IN THESE DOCUMENTS FOR ABBREVIATIONS NOT LISTED HERE.

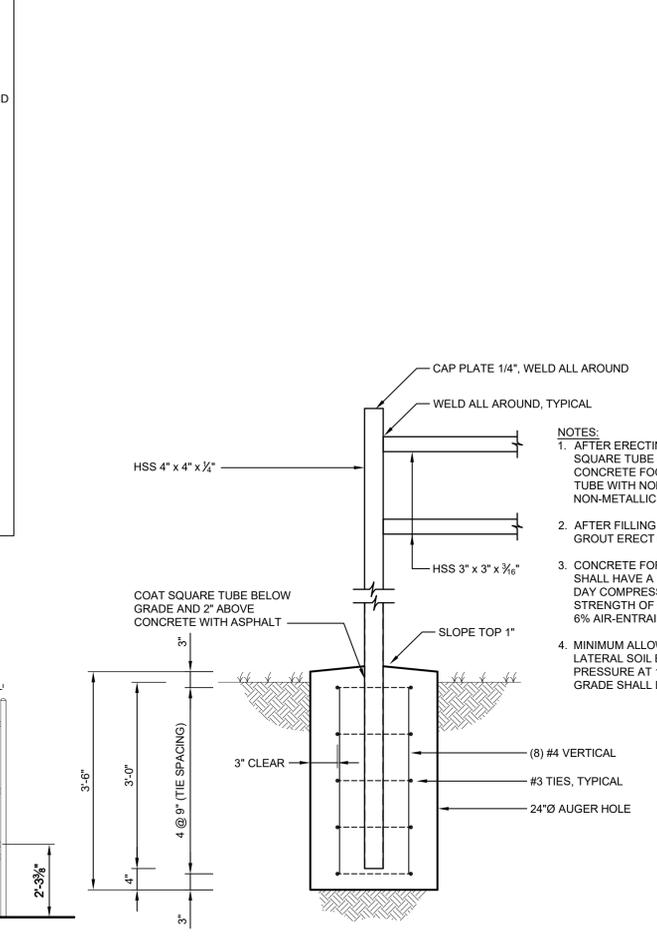


1 ELECTRICAL FRAMING ELEVATIONS
NO SCALE
Dwg # 220199-E4001.DWG

ELEC SYMBOL LEGEND (NOTE 1)

MTG. HGT. (NOTE 2)	SYMBOL (NOTES 3 & 4)	DESCRIPTION
6'-0" TO TOP		480/277 VOLT SURFACE MOUNTED PANELBOARD.
6'-0" TO TOP		480/277 VOLT RECESSED MOUNTED PANELBOARD.
6'-0" TO TOP		208/120 VOLT SURFACE MOUNTED PANELBOARD.
6'-0" TO TOP		208/120 VOLT RECESSED MOUNTED PANELBOARD.
		CONDUIT CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE.
		CONDUIT EXPOSED OR CONCEALED IN WALL OR ABOVE CEILING.
5'-0" TO TOP		DISCONNECT SWITCH. NUMBER INDICATES DISCONNECT SWITCH POLES/ AMP RATING; (AND IF FUSIBLE TYPE) FUSE SIZE. "WP" = INDICATES WEATHER PROOF (NEMA 3R) ENCLOSURE. "FWE" = INDICATES FURNISHED WITH EQUIPMENT.
2'-0" (NOTE 5)		JUNCTION BOX, WALL MOUNTED. REFER TO DRAWINGS FOR MOUNTING HEIGHTS.
2'-0" (NOTE 5)		DUPLEX RECEPTACLE, WALL MOUNTED. ALPHA-NUMERIC OR NUMERIC SUBSCRIPT INDICATES PANELBOARD CIRCUIT. (TYPICAL FOR ALL RECEPTACLES). "GF" = GROUND FAULT RECEPTACLE. "WP" = WATER PROOF. RECEPTACLE MOUNTED IN A WATER PROOF (NEMA-3R) WALL PLATE. "TT" = TVSS AND ISOLATED GROUND RECEPTACLE. "C" = MOUNT RECEPTACLE 2" ABOVE BACKSPLASH/COUNTER TO BOTTOM OF BOX. "H" = MOUNT RECEPTACLE HORIZONTALLY (ALL RECEPTACLE SHALL BE MOUNTED VERTICALLY UNLESS NOTED BY AN "H"). "MC" = PROVIDE MIRRORRED COVERPLATE FOR RECEPTACLE MOUNTED IN MIRRORS.

NOTES (ELECTRICAL SYMBOL LEGEND):
1. THESE ARE STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS. HOWEVER, WHEREVER THIS SYMBOL APPEARS ON THE PROJECT DRAWINGS, THE ITEM SHALL BE FURNISHED AND INSTALLED.
2. UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET. WHERE THE MOUNTING HEIGHT INDICATED ON PLAN IS DIFFERENT FROM THE LEGEND, THE PLAN TAKES PRECEDENT.
3. INSTALL RECEPTACLE AND TELEDATA OUTLET BOXES 6" APART (EDGE TO EDGE) WHERE SHOWN SIDE BY SIDE ON WALL.
4. SEE ELECTRICAL ABBREVIATIONS FOR ALPHABETIC SUBSCRIPT WITH SYMBOL, UNO.
5. MOUNT ALL SINGLE AND DUPLEX RECEPTACLES VERTICALLY WITH GROUND SLOT UP, EXCEPT RECEPTACLES MOUNTED HORIZONTALLY WITH GROUND SLOT TO THE LEFT.



2 FRAMING DETAIL
NO SCALE
Dwg # 220199-E4002.DWG

ELECTRICAL DRAWING INDEX
File # 220199-E1001.DWG

E1.01	ELECTRICAL SPECIFICATIONS, ABBREVIATIONS, AND SYMBOLS
E2.01	ELECTRICAL PLAN, PANEL SCHEDULE, AND RISER DIAGRAM

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CONSTRUCTION PLANS

CHAPEL

