Emerald Fields Expansion 4040 Wyandotte Woods B, Dublin, OH 43017

Bid Document Submittal Site Improvement Package PROJECT NO. 16038

SHEET INDEX

DATE: August 1, 2017

L0.1 L0.2	Site Survey Site Reference Plan
L1.0 L1.1	Demolition and Site Preparation Plan: Tennis Courts Demolition, Site Preparation & Replacement Plan: Sand Volley Courts
L2.0 L2.1	Grading and Drainage Plan: Tennis Courts Grading and Drainage Plan: Sand Volleyball Courts
L3.0 L3.1	Layout Plan: Tennis Courts Layout Plan: Sand Volleyball Courts
L4.0 L4.1 L4.2 L4.3	Planting Notes Tree Protection and Removal Plan Planting Plan and Schedule: Tennis and Volleyball Courts Replacement Planting Plan and Schedule: Parking Lot
SD1.0	Site Details
SD2.0	Planting Details
E-1	Electrical Site Plan

PROJECT DESCRIPTION:

Electrical Specification

BASE BID:

E-2

EMERALD FIELDS ENHANCEMENTS - LUMP SUM BID FOR ALL TRADES, LABOR, EXPERTISE, MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, SHIPPING, SERVICES AND APPURTENANCES NECESSARY TO FURNISH AND CONSTRUCT ALL WORK AS PER PLANS AND SPECIFICATIONS IDENTIFIED AS EMERALD FIELDS OUTDOOR TENNIS COURTS AND SAND VOLLEYBALL COURTS, POURED-IN-PLACE PAVING AND BENCH CONCRETE PADS, BENCH INSTALLATION, GRADING AND DRAINAGE. PLANTING, LIGHTING, AND FENCING.

PREPARED FOR

Mr. Matt Earman, Director City of Dublin Parks & Recreation 6555 Shier Rings Road Dublin, OH 43016

PREPARED BY



100 Northwoods Blvd Columbus, Ohio 43235 p 614.255.3399

10816 Millington Court Suite 118 Cincinnati, Ohio 45242 p 614.360.3066

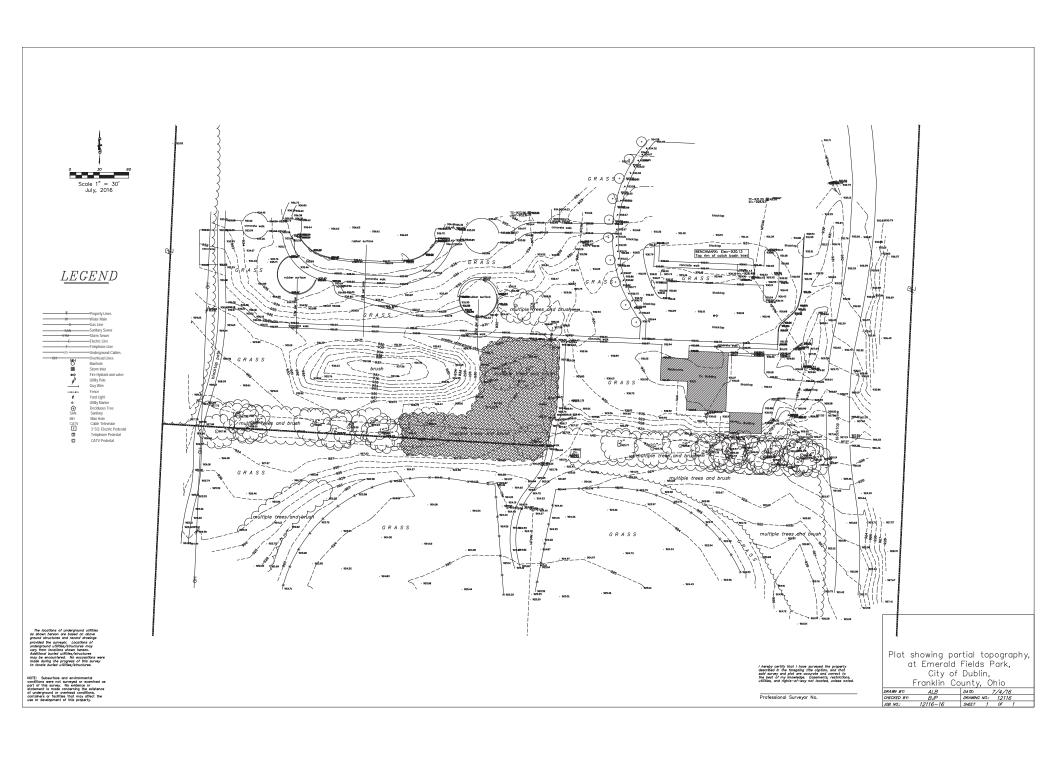
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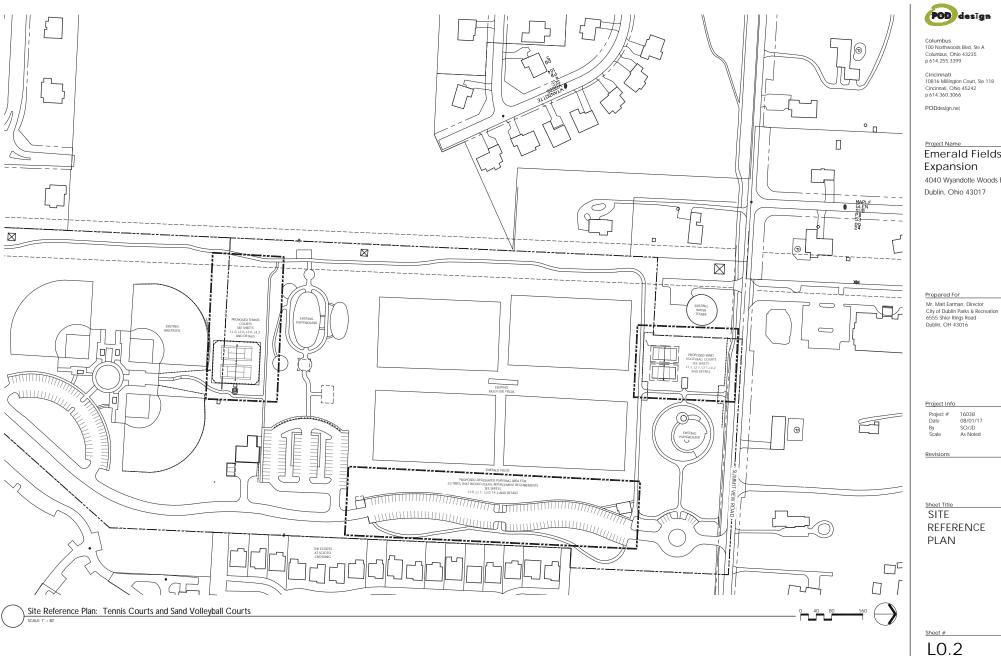
VICINITY MAP



NOT TO SCALE







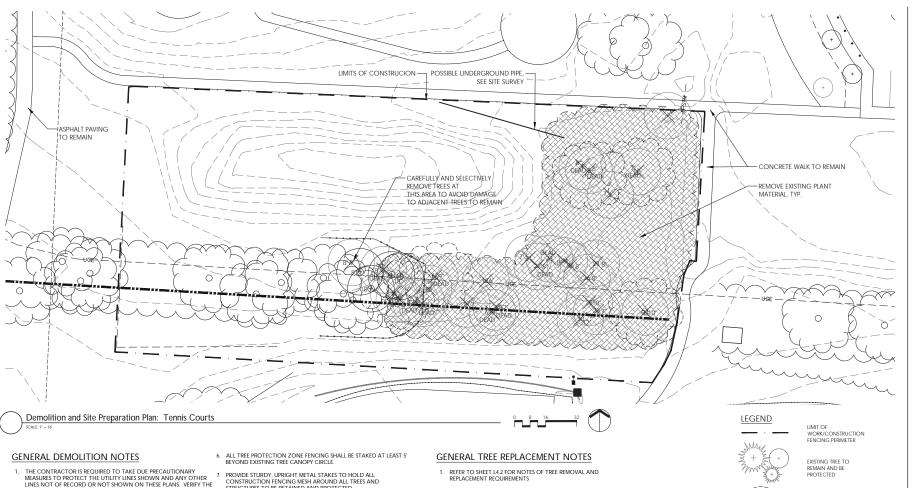
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Emerald Fields

4040 Wyandotte Woods B Dublin, Ohio 43017

16038 08/01/17 SO/JD As Noted

REFERENCE



- LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL DEMOLITION WORK WITH OWNER'S REPRESENTATIVE ON A DAILY BASIS.
- 4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL CONTACT UTILITY SERVICES TO VERIFY LOCATION OF ALL UNDERGROUND
- 5. CONTRACTOR SHALL REPAIR AT HIS OWN EXPENSE ANY DAMAGE, WHETHER INSIDE OR OUTSIDE OF THE PROJECT LIMITS, TO UTILITY
 SYSTEMS, SURFACE PAVEMENTS, FIXTURES OR STRUCTURES THAT ARE NOT SPECIFICALLY INDICATED TO BE REMOVED OR RELOCATED AS PART OF THE PROJECT CONSTRUCTION.
- EXISTING STRUCTURES, PLANTS, AND ANY IMPROVEMENTS WHICH ARE NOT NOTED TO BE REMOVED SHALL BE PROPERLY PROTECTED DURING THE CONSTRUCTION PERIOD. EXISTING TREES SHALL BE PROTECTED FROM IMPACT BY ANY EQUIPMENT AS WELL AS COMPACTION OF ROOT ZONE AREAS.

- STRUCTURES TO BE RETAINED AND PROTECTED.
- UNDER NO CIRCUMSTANCES SHALL ANY DEBRIS, TRACKING, OR EQUIPMENT GO OVER OR BE SET OVER EXISTING TREE ROOT SYSTEMS.
- 10. IF BURIED IRRIGATION EXISTS, THE PIPE MAY BE ABANDONED IN PLACE IF IT WILL NOT INTERFERE WITH ANY NEW WORK, BE EMBEDDED IN NEW PAVED AREAS, OR REMAIN 4" MINIMUM BELOW ALL UNPAVED FINISH GRADES.
- 11. EXISTING LINES TO BE ABANDONED MAY BE CAPPED OFF AT POINTS WHERE CONSTANT PRESSURE IS TO BE MAINTAINED.
- 12. EXISTING FOUNDATIONS OF ABANDONED UTILITIES SHALL BE COMPLETELY REMOVED BELOW THE FOOTPRINT OF NEW
- ALL DIMENSIONS ON THIS DRAWING ARE IN ARCHITECTURAL FEET UNLESS OTHERWISE STATED.

2. REFER TO SHEET L4.3 FOR THE REPLACEMENT AND PLANTING PLAN

EXISTING TREE & STUMP TO BE

> EXISTING LIGHT POLE TO REMAIN

EXISTING FENCE TO

EXISTING CONCRETE TO BE REMOVED, SEE PLAN

EXISTING LANDSCAPE TO BE REMOVED, SEE PLAN

EXISTING PLANTING TO REMAIN TREE PROTECTION FENCING

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Cincinnati 10816 Millington Court. Ste 118 Cincinnati, Ohio 45242 p 614 360 3066

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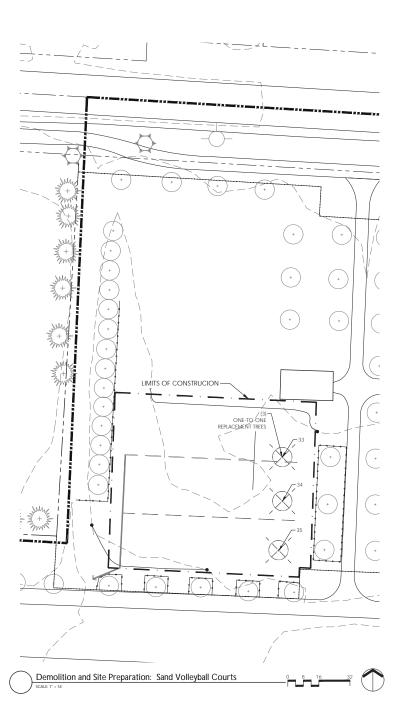
Sheet Title

DEMOLITION & SITE **PREPARATION** PLAN:

TENNIS COURTS

Sheet #

L1.0



EXISTING TREE CONDITION AND STAUS KEY

CONDITION	STATUS
EXCELLENT	(A) PRESERVE
GOOD	(A) PRESERVE OR (B) REMOVE
FAIR	(A) PRESERVE OR (B) REMOVE
POOR	(B) REMOVE AS NOTED
DEAD	(B) REMOVE AS NOTED

ONE-TO-ONE TREE REPLACEMENT INFORMATION

NUMBER	LOCATION	SIZE	STATUS	CONDITION
32	TENNIS COURT	2.5 CAL.	В	GOOD
33	SAND VOLLEYBALL COURT	2.5 CAL.	В	GOOD
34	SAND VOLLEYBALL COURT	2.5 CAL.	В	GOOD
35	SAND VOLLEYBALL COURT	2.5 CAL.	В	GOOD

NOTES FOR TREES REMOVED

112 CALIPER INCHES OF TREE WHICH ARE TO BE REMOVED DUE TO THE POOR, FAIR, DEAD, OR EXEMPT CONDITIONS. REPLACEMENT CALIPER SHALL MATCH INCH FOR CALIPER INCH.

DUE TO THE ABOVE CONDITIONS, TOTAL TREES TO BE REMOVED:
CALCULATED TOTAL COMBINED 112
CALIPER INCHES/ 2.5 CALIPER INCHES =
49 TOFES

TOTAL ADDITIONAL TREES TO REPLACE EXISTING, MARKED AS "ONE-TO-ONE REPLACEMENT"= 4 TREES (3 AT VOLLEYBALL COURT AREA + 1 IN TENNIS COURT AREA)

TOTAL TREES REQUIRED FOR REPLACEMENT: 49 + 4 = 53

GENERAL TREE REPLACEMENT NOTES

- . REFER TO SHEET L4.2 FOR NOTES OF TREE REMOVAL AND REPLACEMENT REQUIREMENTS
- REFER TO SHEET L4.3 FOR THE REPLACEMENT AND PLANTING PLAN





LIMIT OF WORK/CONSTRUCTION FENCING PERIMETER





EXISTING TREE & STUMP TO BE REMOVED



EXISTING LIGHT POLE TO REMAIN





TREE PROTECTION FENCING

GENERAL DEMOLITION NOTES

- THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY
 MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER
 LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. VERIFY THE
 LOCATION OF ALL UNDERGROUND UTILITIES.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL DEMOLITION WORK WITH OWNER'S REPRESENTATIVE ON A DAILY BASIS.
- 4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL CONTACT UTILITY SERVICES TO VERIFY LOCATION OF ALL UNDERGROUND LITHIUTE
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 WHETHER INSIDE OR OUTSIDE OF THE PROJECT LIMITS, TO UTILITY
 SYSTEMS, SURFACE PAYEMENTS, FIXTURES OR STRUCTURES THAT ARE
 NOT SPECIFICALLY INDICATED TO BE REMOVED OR RELOCATED AS
 PART OF THE PROJECT CONSTRUCTION.
- 6. EXISTING STRUCTURES, PLANTS, AND ANY IMPROVEMENTS WHICH ARE NOT NOTED TO BE REMOVED SHALL BE PROFERLY PROTECTED DURING THE CONSTRUCTION PERIOD. EXISTING TREES SHALL BE PROTECTED FROM IMPACT BY ANY EQUIPMENT AS WELL AS COMPACTION OF ROOT ZONE AREAS.
- ALL TREE PROTECTION ZONE FENCING SHALL BE STAKED AT LEAST 5' BEYOND EXISTING TREE CANOPY CIRCLE.
- PROVIDE STURDY, UPRIGHT METAL STAKES TO HOLD ALL CONSTRUCTION FENCING MESH AROUND ALL TREES AND STRUCTURES TO BE RETAINED AND PROTECTED.
- UNDER NO CIRCUMSTANCES SHALL ANY DEBRIS, TRACKING, OR EQUIPMENT GO OVER OR BE SET OVER EXISTING TREE ROOT SYSTEMS.
- ALL DEBRIS AND ITEMS REMOVED SHALL BE DISPOSED OF LEGALLY OFF-SITE.
- 11. IF BURIED IRRIGATION EXISTS, THE PIPE MAY BE ABANDONED IN PLACE IF IT WILL NOT INTERFERE WITH ANY NEW WORK, BE EMBEDDED IN NEW PAVED AREAS, OR REMAIN 4" MINIMUM BELOW ALL UNPAVED FINISH GRADES
- 12. EXISTING LINES TO BE ABANDONED MAY BE CAPPED OFF AT POINTS WHERE CONSTANT PRESSURE IS TO BE MAINTAINED.
- 13. EXISTING FOUNDATIONS OF ABANDONED UTILITIES SHALL BE COMPLETELY REMOVED BELOW THE FOOTPRINT OF NEW FOUNDATIONS.
- 14. ALL DIMENSIONS ON THIS DRAWING ARE IN ARCHITECTURAL FEET UNLESS OTHERWISE STATED.

POD desīgn

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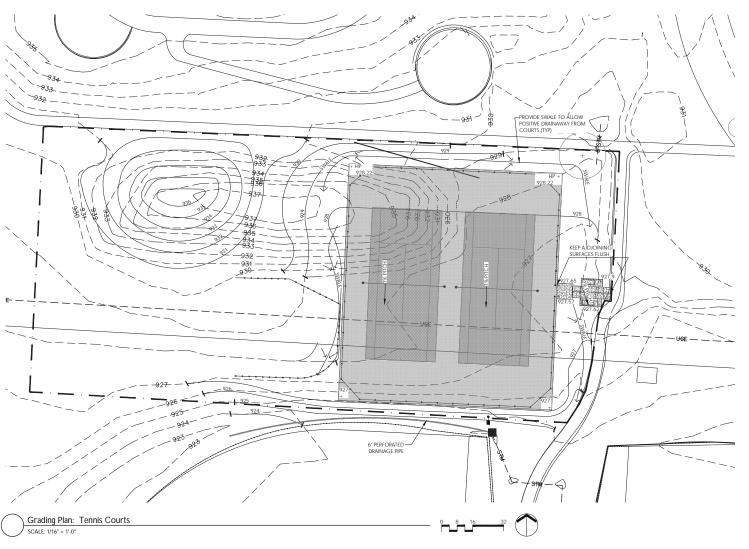
Sheet Title

DEMOLITION, PREPARATION & REPLACEMENT PLAN:

SAND VOLLEYBALL COURTS

Sheet #

L1.1



GRADING NOTES

1. CONTRACTOR TO VERIFY WITH THE OWNER'S REPRESENTATIVE AND UTILITY COMPANIES THE LOCATIONS OF THE EXISTING UTILITIES PRIOR TO START. CALL OHIO UTILITIES PROTECTION SERVICES AT (800)362-2764. CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PROJECT.

2. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCY BETWEEN THE PLANS AND ACTUAL SITE CONDITIONS. NO WORK SHALL BE DONE IN AREAS WHERE SUCH DISCREPANCIES EXIST

3. CONTRACTOR SHALL COORDINATE ALL WORK AND BE RESPONSIBLE FOR ALL METHODS, MEANS, SEQUENCE, AND PROCEDURES OF THE WORK.

4 DO NOT DISTURB AREAS OUTSIDE OF PROJECT LIMITS

6. CROSS SLOPES AT ALL WALKS SHALL NOT EXCEED 2%, UNLESS OTHERWISE INDICATED ON THE PLANS. MAINTAIN POSITIVE DRAINAGE IN ALL AREAS.

7. PRESERVE EXISTING FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING FACILITIES RESULTING FROM CONSTRUCTION ACTIVITIES.

GRADES SHOWN INDICATE FINISH SURFACE OF FINAL PAVEMENT. VERIFY DEPTH OF PAVEMENT SECTION PRIOR TO ROUGH GRADING.

PROVIDE POSITIVE DRAINAGE FROM ALL PAVEMENT SURFACES TO CURB OR INLETS AS INDICATED (1% MINIMUM), NO PONDING WILL BE PERMITTED.

5. MAXIMUM SLOPES SHALL NOT EXCEED 3:1 IN LAWN AND PLANTING AREAS, UNLESS OTHERWISE INDICATED ON THE PLANS. MAINTAIN POSITIVE PORTING FOR CONSTRUCTION TRAFFIC. CARE SHOULD BE TAKEN TO NOT DEPAIL AND ALL AREAS. LIMIT WORK TO DISTURBED AREAS ONLY. PROVIDE TREE PROTECTION FENCING AS INDICATED ON PLAN AND PER TREE PROTECTION DETAIL. COORDINATE WITH OWNER'S REPRESENTATIVE AS REQUIRED.

EXISTING VEGETATION LEGEND



EXISTING TREE TO REMAIN AND BE PROTECTED

GRADING LEGEND



TREE PROTECTION FENCING

GRADING ABBREVIATIONS

= BOTTOM OF CURB = BOTTOM OF WALL = BREAK POINT = EDGE OF PAVEMENT RIM = RIM ELEVATION INV = INVERT
MEG = MEET EXISTING GRADE FINISH FLOOR

FIEVATION TOP OF CURB = TOP OF STAIR

TS TW HP LP = TOP OF WALL = HIGH POINT = LOW POINT THP = TRENCH DRAIN HIGH POINT

TLP = TRENCH DRAIN LOW POINT

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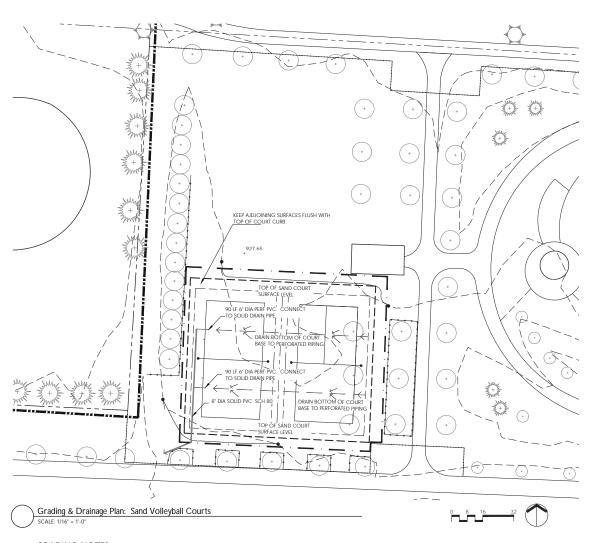
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GRADING & DRAINAGE PLAN:

TENNIS COURTS

Sheet #

L2.0



GRADING NOTES

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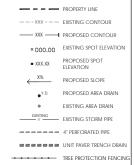
10. PROTECT EXISTING TREES, SHRUBS, AND GROUNDCOVERS FROM ANY TYPE OF CONSTRUCTION TRAFFIC. CARE SHOULD BE TAKEN TO NOT COMPACT SOLIO OR ADD LIMIT WORK TO DISTURBED AREAS ONLY. PROVIDE TREE PROTECTION FENCING AS INDICATED ON PLAN AND PER TREE PROTECTION DETAIL. COORDINATE WITH OWNER'S REPRESENTATIVE AS REQUIRED.

EXISTING VEGETATION LEGEND





GRADING LEGEND



GRADING ABBREVIATIONS

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FIEVATION TOP OF CURB TS TW = TOP OF STAIR = TOP OF WALL = HIGH POINT

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GRADING & DRAINAGE PLAN:

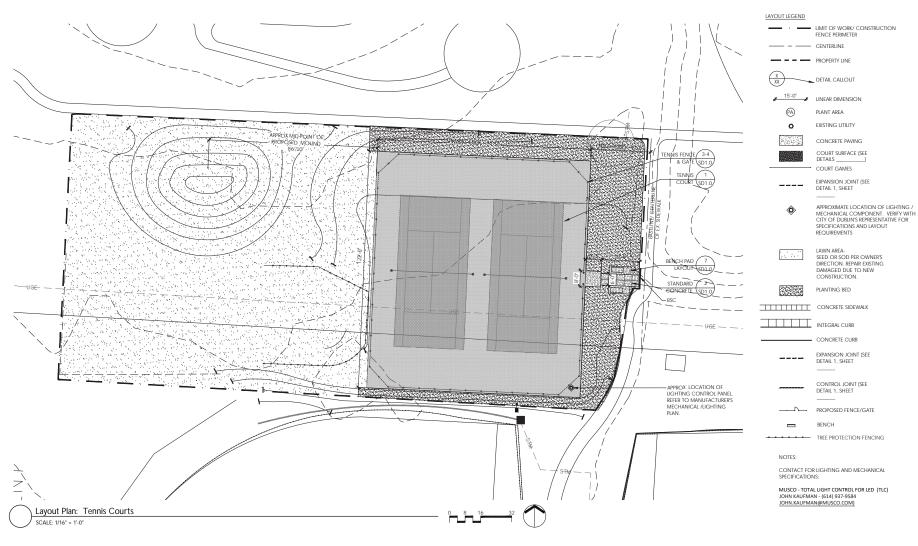
SAND VOLLEYBALL **COURTS**

Sheet #

L2.1

DRIANAGE PIPE NOTES

1. LAY OUT TWO PERFORATED DRAINAGE PIPES PER COURT, ONE ON EACH END, WITH THE OPEN END AT THE LOW POINT OF THE COURT. INSTALL DRAINAGE PIPE ON THE STANDARD LEACH SLANT (14 DEGREES). USE 6 INCH SCHEDULE 40 PVC PERFORATED PIPES FOR DRAINAGE. THE PIPES SHALL BE CONNECTED TO THE NEAREST STORM WATER MANHOLE



GENERAL LAYOUT NOTES

- CONTRACTOR TO VERIFY WITH THE OWNER'S REPRESENTATIVE AND UTILITY COMPANIES 4. THE LOCATIONS OF THE EXISTING UTILITIES PRIOR TO START. CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PRO JECT
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- 3. DO NOT SCALE DRAWINGS. UTILIZE DIMENSIONS INDICATED ON THE PLANS. THE CONTRACTOR SHALL COORDINATE ALL WORK AND BE RESPONSIBLE FOR ALL METHODS MEANS, SEQUENCE, AND PROCEDURES OF THE WORK
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL LINE WORK, LAYOUT AND DIMENSIONS ARE PARALLEL AND PERPENDICULAR TO ONE ANOTHER
- DO NOT DISTURB AREAS OUTSIDE OF PROJECT LIMITS.
- PROTECT EXISTING FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING FACILITIES RESULTING FROM CONSTRUCTION
- NOTIFY OWNER AND OWNER'S REPRESENTATIVE TO REVIEW LAYOUT STAKING AND DIRECT FIELD MODIFICATIONS AS NEEDED PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.

GENERL ELECTRIC NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL ELECTRICAL ORDINANCES. CONSULT WITH THE CITY'S LOCAL ELECTRICIAN OR ENGINEER FOR CONDUIT SIZE, WIRE SIZE, CIRCUIT INFORMATION, AND SWITCHING OPTIONS. PROVIDE NECESSARY PERMITS.

 CONFIRM WITH THE MANUFACTURERS SPECIFICATIONS AND THE CITY OF DUBLIN
- CODES ON THE ELECTRICAL SYSTEM, POLES, AND FIXTURE REQUIREMENTS. PROVIDE A SITE VISIT TO CONFIRM THE LOCATION OF THE FOLLOWING COMPONENTS: TRANSFORMER, CONTROL SYSTEM PANEL, TIMER BUTTON SYSTEM, OVERRIDE
- IRANSFONDER, CONTROL SYSTEM PARKEL, LINES BUTTON SYSTEM, OVERBUDE CONTROLLER PROVIDE THE CITY OF DUBLIN THE PARKE BOARD SCHEDULE SETTINGS MOUNTING HEIGHTS, UNLESS OTHERWISE NOTED, ARE TO CENTER INFO OF EQUIPMENT, EXCEPT MOUNTING HEIGHTS OF LIGHTING FIXTURES WHICH IS TO BOTTOM OF FIXTURE.
- CONFIRM WITH THE CITY OF DUBLIN FOR MECHANICAL EQUIPMENT LOCATIONS.
- PROVIDE GROUNDING CONDUCTORS IN ALL BRANCH CIRCUIT RACEWAYS. SEPARATE NEUTRALS SHALL BE PROVIDED FOR EACH RECEPTACLE BRANCH CIRCUIT.

- COORDINATE WITH THE CITY OF DUBLIN'S REPRESENTATIVE ON ALL LIGHTING POST
- PROVIDE LOCKABLE PANEL AND JUNCTION BOXES IN ACCESSIBLE LOCATIONS, AS PER CITYS REQUIRED LOCATIONS. PROVIDE FUSES IN DISCONNECT SWITCHES AS RECOMMENDED BY THE MANUFACTURER OF THE CONNECTED EQUIPMENT. VERIFY WITH THE OWNERS REPRESENTATIVE AND UTILITY COMPANIES THE LOCATIONS OF THE EXISTING UTILITIES PRIOR TO START. CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LIGHTING INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PROJECT
- WE RECOMMEND THAT YOU INSTALL UNDERGROUND WIRING IN CONDUIT BETWEEN POLES AND BACK TO THE POWER SOURCE FOR FUTURE MAINTENANCE ON ALL TENNIS COURT AND SPORT LIGHTING APPLICATIONS. ALWAYS SELECT THE HIGHEST VOLTAGE AVAILABLE TO OPERATE YOUR SYSTEM TO PREVENT VOLTAGE DROP, ALL OUR TENNIS LIGHTING FIXTURES ARE EQUIPPED WITH MULTI-TAP BALLAST THAT OPERATES AT 120, 208 240 OR 277 VOLTS MAINTAINING GOOD VOLTAGE WILL PREVENT POOR LIGHTING PERFORMANCE AND IMPROVE ENERGY CONSUMPTION



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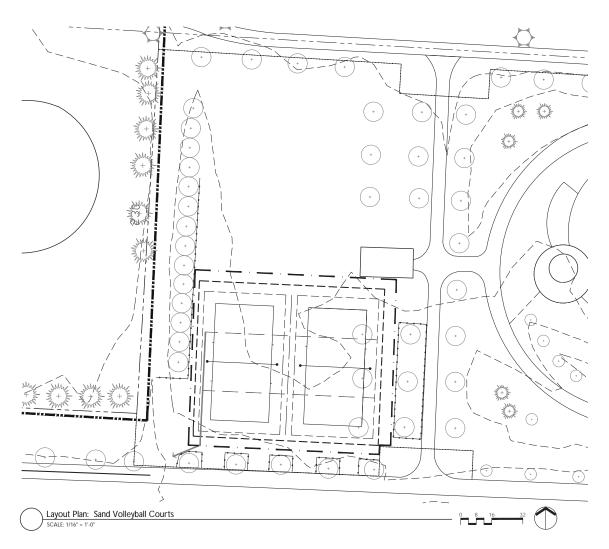
Revisions

Sheet Title LAYOUT PLAN:

TENNIS

COURTS

L3.0



GENERAL LAYOUT NOTES

- CONTRACTOR TO VERIFY WITH THE OWNERS REPRESENTATIVE AND UTILITY COMPANIES 4.1 UNILESS OTHERWISE INDICATED ON THE PLANS, ALL LINE WORK, LAYOUT AND THE LOCATIONS OF THE FUSITING UTILITIES PRICE TO STEART CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTILLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE
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- 3. DO NOT SCALE DRAWINGS. UTILIZE DIMENSIONS INDICATED ON THE PLANS. THE CONTRACTOR SHALL COORDINATE ALL WORK AND BE RESPONSIBLE FOR ALL METHODS, MEANS, SEQUENCE, AND PROCEDURES OF THE WORK.

- PROTECT EXISTING FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING FACILITIES RESULTING FROM CONSTRUCTION
- NOTIFY OWNER AND OWNER'S REPRESENTATIVE TO REVIEW LAYOUT STAKING AND DIRECT FIELD MODIFICATIONS AS NEEDED PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.



 LIMIT OF WORK/ CONSTRUCTION FENCE PERIMETER

---- CENTERLINE

PROPERTY LINE

_ DETAIL CALLOUT

(PA) PLANT AREA

EXISTING UTILITY

CONCRETE PAVING COURT SURFACE (SEE DETAILS

COURT GAMES

EXPANSION JOINT (SEE DETAIL 1, SHEET

ΙΔΨΝΙ ΔΡΕΔ. SEED OR SOD PER OWNER'S DIRECTION. REPAIR EXISTING DAMAGED DUE TO NEW CONSTRUCTION.

PLANTING BED

CONCRETE SIDEWALK INTEGRAL CURB

CONCRETE CURB

EXPANSION JOINT (SEE DETAIL 1, SHEET

CONTROL JOINT (SEE DETAIL 1, SHEET

PROPOSED FENCE/GATE

RENCH

TREE PROTECTION FENCING



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LAYOUT PLAN:

SAND VOLLEYBALL COURTS

Sheet #

L3.1

PLANT INSTALLATION NOTES

- 1. REFER TO GENERAL NOTES ON SHEET L1.0.
- PLANT MATERIAL SHALL BE FURNISHED IN THE QUANTITIES AND LAYOUT AS SHOWN. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE.
- CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL SITE ELEMENTS AND IMMEDIATELY INFORM THE CITYS REPRESENTED OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ACTUAL CONDITIONS, NO WORK SHALL BE DONE IN ANY AREA WHERE THERE IS A DISCREPANCY WITHOUT OWNERS REPRESENTATIVE APPROVAL
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISH GRADING IN THE PROJECT REQUIRED TO PROVIDE A PROPER SEED AND PLANTING RED.
- ALL PLANT MATERIAL TO MEET OR EXCEED AMERICAN STANDARD FOR NURSERY STOCK, 1986 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
- 6. ALI PLANT MATERIALS SUBECT TO INSPECTION PRIOR, DURING AND AFFE INSTALLATION. ANY PLANT NOT MEETING THE REQUIREMENTS WILL BE CAUSE FOR REJECTION BY THE OWNERS REPRESENTATIVE. ALI PELICETO PLANTS SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE REPLACEMENT MATERIAL SHALL BE PROVIDED.
- 7. ALL SUBSTITUTIONS AND PLAN CHANGES MUST BE APPROVED BY CITYS REPRESENTATIVE PRIOR TO ANY ACTION TAKEN. TREES SHALL BE PROTECTED AND HANDLED CAREFULLY AT ALL TIMES DURING TRANSPORT & HANDLING TO PREVENT DRYING OF TREE OR ROOT BALL BY WINDS AND TO PREVENT ANY DAMAGE OR BREAKAGE OF THE ROOT BALL BARK SHALL BE PROTECTED FROM BRUISING OR ARRASION.
- WATER TREES IMMEDIATELY AFTER PLANTING AND CONTINUE TO WATER UNTIL FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE.
- PLANT LOCATIONS AND BEDS SHALL BE LOCATED BY CONTRACTOR AND APPROVED BY CITY'S REPRESENTATIVE PRIOR TO PLANT INSTALLATION.
- MULCH PLANTING BEDS WITH TWO INCHES (2") DEPTH OF DARK, SHREDDED HARDWOOD MULCH. SUBMIT SAMPLE TO OWNER FOR ADDROVAL
- ALL AREAS OUTSIDE OF PLANTING BEDS SHALL BE SEEDED OR SODDED AS SHOWN ON THE PLANS AND NOTED IN THE TECHNICAL SPECIFICATIONS.
- 12. FINISHED TURF (SOD OR SEED) TO BE FLUSH WITH TOP OF ADJACENT CURB OR WALK. COORDINATE WITH OWNERS REPRESENTATIVE IN FIELD AS REQUIRED.
- THE CONTRACTOR SHALL GUARANTEE ALL TREES FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPLACE MATERIAL WITHIN SEVEN (7) DAYS OF NOTIFICATION OF THE OWNERS REPRESENTATIVE.
- 14. PEFORM CLEANING DURING INSTALLATION OF LANDSCAPE WORK AND LIPON COMPETION REMOVE FROM SITE ALL EXCESS LANDSCAPE RELATED MATERIAL, SOIL DEBBIS AND EQUIPMENT. REPAIR DAMAGE RESULTING FROM LANDSCAPING OPERATIONS. SWEEP AND HOSE DOWN PAYED SURFACES AFFECTED BY LANDSCAPING OPERATIONS. COORDINATE WITH DOWNER'S REPRESENTATIVE AND OTHER CONTRACTORS FOR FINAL CLEANIUP. PRIOR TO CLEANING.

QUALITY ASSURANCE:

- INSTALLER QUALIFICATIONS: ENGAGE AN EXPERIENCED
 INSTALLER WHO HAS COMPLETE DANDSCAPING WORK SIMILAR
 IN AMTERIAL, DESION, AND EXTENT TO THAT INDICATED FOR THIS
 PROJECT AND WITH A RECORD OF SUCCESSFUL TREE AND SHRUB
 FSTARI INHAFENT
- INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME SUPERVISOR ON THE PROJECT SITE DURING TIMES THAT TREE AND SHRUB PLANTING IS IN PROGRESS.
- PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF TREES INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK."
- 4. OBSERVATION: LANDSCAPE ARCHITECT RETAINS RIGHT TO OBSERVE PLANTS FURTHER FOR SIZE AND CONDITION OF ROOT BALLS AND ROOT SYSTEMS, INSECTS, INJURIES, AND LATENT DEFECTS AND TO REJECT UNISATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. REMOVE PRICTIFED TO ANTI SMAPPINISTY FROM PROTICET SITE.

GENERAL PLANT NOTES

- EACH TREE THAT IS PLANTED IN TURF SHALL HAVE A 6' DIAMETER MULCH RING.
- CONTRACTOR MAY SLIGHTLY FIELD ADJUST PLANT LOCATIONS AS NECESSARY TO AVOID UTILITIES. FINISHED PLANTING BEDS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE
- BED EDGE SHALL BE SMOOTH, CONSISTENT, HAND TRENCHED 3° TO 4° DEEP AND "V" SHAPED UNLESS OTHERWISE NOTED. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE BED EDGE AND PLANTING REP.
- ALL PLANTING BED EDGES TO BE SMOOTH FLOWING ARCS OR STRAIGHT LINES AS SHOWN ON PLAN, PLANT LOCATIONS AND LAYOUT OF BEDS SHALL BE LOCATED BY CONTRACTOR AND APPROVED BY OWNER PRIOR TO PLANTING.
- RAISED BEDS, INCLUDING MULCH, SHALL BE NO HIGHER THAN 6 INCHES AROVE AD IACENT GRADE

SEEDING:

- DO NOT START FINISH SEEDING WORK UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED AND AFTER ROUGH GRADING, FINISH GRADING AND ANY OTHER WORK AFFECTING GROUND SURFACE IS COMPLETED.
- REMOVE STONES, STICKS, CONSTRUCTION DEBRIS, AND OTHER DELETERIOUS DEBRIS.
- DELAY TILLING IF THE GROUND IS WET; THE SOIL MUST BE DRY ENOUGH TO BREAK APART WHEN TILLED.
- SEED ALL AREAS WITHIN CONTRACT LIMITS THAT ARE NOT COVERED BY PAVING, BUILDINGS OR PLANTING BEDS UNLESS OTHERWISE NOTED. SEEDING SHALL NOT BEGIN UNTIL AREA HAS RECEIVED TOPSOIL AND FINISHED GRADE.
- 5. GRADE LAWN AREAS TO A SMOOTH, FREE-DRAINAGE EVEN SURFACE WITH A LOOSE MODERATIEV COARSE TRITUBE. ROLL, AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS AS REQUIRED TO DRAIN. SURFACE SHALL BE GRADED TO SUCH ELEVATION SO THE LAWN SHALL BE FILISH WITH ANY ADJACENT TURF AREA, PAYMENT OR CLUBS.
- INSURE THAT SOIL AT ALL PAVEMENT EDGES WHERE LAWN WILL BE ESTABLISHED ARE HAND TAMPED TO MINIMIZE SETTLING.
- 7. FOLLOW SUPPLIER'S RECOMMENDED SEEDING APPLICATION RATE AND INSTALLATION PROCEDURES.
- RAKE FINISH GRADE LIGHTLY UNTIL SURFACE IS SMOOTH, LOOSE, PULVERIZED.
- 9. SPREAD EVENLY SOWING EQUAL QUANTITIES IN 2 DIRECTIONS, AT RIGHT ANGLES TO EACH OTHER
- 10. RAKE OR DRAG SURFACE OF THE SOIL LIGHTLY TO INCORPORATE SEED INTO TOP 1/8" OF SOIL.
- 11. IMMEDIATELY AFTER SEEDING, COVER AREAS WITH APPROVIDE MULICH, EVENTA SPEED AT A RATE OF 2 1/5 TOOS PER ACRE. WATERING: FOLICOWING INSTALLATION OF SEEDED LAWNS, ENTIRE AREA WILL BE WATERED BY USE OF LAWN SPRINLERS, INITIAL WATERING SHALL CONTINUE UNITL THE COLUMNENT OF 2'DEPTH OF WATER HAS BEEN APPLIED OVER THE ENTIRE LAWN AREA, AT A RATE, WHICH WILL NOT DISLODGE SEED WATERING RHETHOOS AND EQUIPMENT WHICH MAY CAUSE EROSION AND / OR COMPACTION OF THE SURFACE WILL NOT BE PREMITTED.

SEEDING SCHEDULE

- CONFIRM WITH LANDSCAPE ARCHITECT WATERING SCHEDULE REQUIREMENTS DURING AND AFTER INSTALLATION.
- 2. CONFIRM DIRECTIONS FROM SEED MIX SUPPLIERS FOR TYPICAL LOCAL INSTALLATION SCHEDULING: SEED OVER TREATED BEDS DURING DECEMBER 15TH. JANUARY 15 FALL SEEDING BETWEEN SEPTEMBER 15 - DECEMBER 15 COVER CROP INSTALLATION NO LATER THAN OCTOBER 15 NO SEEDING BETWEEN JURIS 15TH. SEPTEMBER 15

IMPORTED SOIL AMENDMENTS:

- UNLESS OTHERWISE STATED, IT IS EXPECTED THAT THE LANDSCAPE CONTRACTOR STALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO COMPLET THE WORK DESCRIBED HERRIN IN STRICT ACCORDANCE WITH THE DRAWINGS AND/OR TERMS OF THE CONTRACT.
- 2. IF SOIL IS NEEDED TO INSURE POSITIVE DRAINAGE, PROVIDE
- 3. PROVIDE TOPSOIL AS PER ASTM D 5286, FERTILE, FRIABLE, NATURALLY LOAMY, PH BRANGE OF 5.5 TO 7.4 PERCENT ORGANIC MATERIAL MINIMUM, FEEE OF TERE ROOTS, STUMPS, BUILDING MATERIAL, AND TRASH, AND SHALL BE FREE OF STONES LARGER THAN 11/2 INCHES IN ANY DIMENSION. TOPSOIL SHALL BE FREE OF QUIACKGRASH, RIHZOMES (AGROPYMON REPENS) AND THE NUT-LIKE TUBERS OF NUTSEDGE (CYPREUS SECUENTUS).
- SEEDED AND SODDED AREAS: FILL DEPRESSIONS WITH ON-SITE
 STOCKPILE SOIL

GRADING:

- 1. TOPSOIL THAT IS MROOTED ON SITE SHALL BE UNIFORMLY DISTRIBUTED ON THE DESIGNATED AREAS. SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT PLANTING INSTALLATION CAN PROCEED WITH A ANNIHOLD OF ADDITIONAL SOLID REPARATION, AND SULLING OR OTHER OPERATION. SHALL BE CORRECTED IN ORDITORY OF ADDITIONAL SHALL BE CORRECTED IN ORDITORY OF ADDITIONAL SHALL BE CORRECTED IN CORRECT OR PREVENT THE FORMATION OF DEPRESSIONS OR CROWNS. TO SHOULD SHALL NOT BE PLACED WHILE IN A PROZEN OF MUIDDY CONDITION OR WHEN THE SUB-GRADE IS EXCESSIVELY WET, OR IN A CONDITION HAT MAY OTHERWISE BE DETRIBUTENT AT OF ORDITOR OR PROPOSED SEEDING, SODDING, AND PLANTING INSTALLATION OF RECPOSED SEEDING, SODDING, AND PLANTING INSTALLATION.
- ALL PREVIOUSLY ESTABLISHED GRADES SHALL BE MAINTAINED IN CONFORMANCE WITH THE DRAWINGS AND/OR OTHER SPECIFICATIONS
- TILLAGE: ANY APPLIED LIME AND FERTILIZER SHALL BE UNIFORMLY
 MIXED INTO THE TOP FOUR INCHES OF SOIL.
- ANY UNDULATIONS OR IRREGULARITIES IN THE SURFACE RESULTING FROM FERTILIZING, LIMING, OR OTHER CAUSES SHALL BE LEVELED PRIOR TO TURNEGASS SEED OR SO DI INSTALLATION. AREAS DAMAGED BY FLOODING OR EROSION SHALL BE RECONSTRUCTED AND ALL GRADES RESTABLED BY THE LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE DRAWINGS AND/OR OTHER APPLICABLE
- 5. CARE SHOULD BE TAKEN TO KEEP KOULPMENT OFF PREPARED AREAS AFTER TOPSOL MIX HAS BEEN PLACED. PARTICULAR CARE SHOULD BE TAKEN TO AVOID "COMPACTION" DURING THE GRADING PROCESS. THE USE OF CLAY SOLIS FOR GRADING MATERIAL AND THE UTILIZATION OF HEAVY EQUIPMENT FOR SURFACE PREPARATION WILL CONTRIBUTE TO SOLIC COMPACTION.

ACCEPTANCE:

- ACCEPTANCE SHALL BE GIVEN BY THE OWNER OR HIS OR HER AGENT UPON SATISFACTORY COMPLETION OF EACH SECTION OR AREA INDICATED ON THE DRAWINGS OR AS OTHERWISE SPECIFIED. ACCEPTANCE SHALL BE RECORDED AND SIGNED BY THE OWNER OR AUTHORIZED AGENT.
- PROVIDE APPROVED EROSION CONTROL MEASURES BEFORE AND AFTER SEEDING, SODDING, AND PLANTING
- CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING UNTIL FINAL ACCEPTANCE
- EXCAVATION:
- PITS AND TRENCHES: EXCAVATE WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO ASSIST DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
- TREES AND ENRUBS: EXCAVATE APPROXIMATELY 3 TIMES AS WIDE AS BALL DIAMETER AND EQUAL TO BALL DEPTH PLUS 9 INCHES SETTING

 LAYED DEPTH
- WHERE DRAIN TILE IS SHOWN OR REQUIRED UNDER PLANTED AREAS, EXCAVATE TO TOP OF POROUS BACKFILL OVER TILE.
 OBSTRUCTIONS: NOTIFY LANDSCAPE ARCHITECT IF UNEXPECTED.
- OBSTRUCTIONS: NOTIFY LANDSCAPE ARCHITECT IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.
- DRAINAGE: NOTIFY LANDSCAPE ARCHITECT IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PITS.
- RETENTION IN TREE OR SHRUB PITS.

 6. FILL EXCAVATIONS WITH WATER AND ALLOW TO PERCOLATE OUT,
 BEFORE PLACING SETTING LAYER AND POSITIONING TREES AND
 SHRUBS

PLANTING:

- PLANTS SHOULD BE INSTALLED THE SAME DAY THE HOLES ARE CREATED. SET BALLED AND BURLAPPED STOCK PLUMB AND IN CENTER OF PIT OR TRENCH WITH TOP OF BALL RAISED ABOVE ADJACENT FINISH GRADES AS INDICATED.
- PLACE STOCK ON SETTING LAYER OF COMPACTED PLANTING SOIL
- 2. P.D.C. STOCK OF USING PLATE OF COMPACED FORWARD STATES.

 REMOVE BURLAP AND WIRE BASKETS FROM TOPS OF BALLS AND PARTIALLY FROM SIDES, BUT DO NOT REMOVE FROM UNDER BALLS. REMOVE PALLTS, IF ANY, BEFORE SETTING. DO NOT USE FAUNTING STOCK IF BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.
- DIG HOLES FOR TREES AT LEAST 3X THE WIDTH OF THE CONTAINER
 OR B&B
- 5. PLACE BACKFILL AROUND BALL IN LYFES, TAMPING TO SETTLE BACKFILL AND ELBINIATE VOIDS AND ARE POCCETS. WHEN THIS APPROXIMATELY 12 BACKFILLED, WATER THOROUGHTU SEFORE PLACING SEMANIDER OF BACKFILL EPERAT WATERING UNTIL NO MOBE IS ABSORBED. GENEROUSIY SOAK AGAIN AFTER PLACING AND TAMPING ENMIL LYFE OF BACKFILL
- BEEN DUG OUT INTO SMALL PIECES AND GRANULES AND MIXED THOROUGHLY WITH SOULD AMENDMENTS AS SPECIFIED AND MIXED THOROUGHLY WITH SOLID AMENDMENTS AS SPECIFIED AND MIXED THOROUGHLY WITH SOLID AMENDMENTS AS SPECIFIED AND MIXED
- WITH **ROOTS

 TRANSPART I. STEP 2-2-2-2 AND "SERRABLEN 17.6-10". BACKFILL IS ADDED TO THE HOLE AND TAMED WITH FEET OR HAND TOOLS AS IT IS PLACED INTO THE HOLE AND TAMED WITH FEET OR HAND TOOLS AS IT IS PLACED INTO THE #T. DO NOT USE FROZEN OR MUDDY MIXTURES FOR BACKFILLING, FOR INDIVIDUAL TREES FORM A RING OF SOIL OUTSIDE OF THE BALL FOOR THAT IS APPROXIMATELY 6' WIDE AT THE BASE AND 3" IN HEIGHT TO THE TOP OF THE RING WITH THE EXCESS BACKFILL MIXTURE AS A MEANS TO RETAIN WATER. DO NOT COVER TOP OF THE TREE AND SHRUB FOOT BALL WITH BACKFILL OF
- 7. DISH AND TAMP TOP OF BACKFILL TO FORM A 3-INCH- HIGH MOUND AROUND THE RIM OF THE PIT. DO NOT COVER TOP OF ROOT BALL WITH BACKFILL.

SOD: (USE ONLY IF REQUESTED BY OWNER).

- TURFGRASS SOD SUPPLIERS: SOD SHALL SUPPLIED BY LOCAL SUPPLIERS, SUCH AS TURPIN FARMS (513)561-2621 OR APPROVED EQUAL.
- SOD QUALITY: SOD SHALL BE OF GOOD QUALITY, FREE OF WEEDS, DISEASE AND INSECTS AND OF GOOD COLOR AND DENSITY.
- THICKNESS OF CUT: TURF SHALL BE MACHINE-CUT AT A MINIMUM UNIFORM SOIL THICKNESS NECESSARY FOR PLANT VIABILITY DURING THE HARVEST-TRANSPORT-INSTALLATION CYCLE
- PAD SIZE: INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT.
- 5. STRENGTH OF SOD SECTIONS: STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR JEZ AND SHAPE WHEN SUSPENDED VERTICALLY FROM A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- 6. BEPLACEMENT. THE POLICY FOR REPLACEMENT OF SOD IS DEPENDENT UPON EACH INDIVIDUAL FARM. MOST REPLACEMENTS EXTEND ONLY TO THE COST OF THE SOD INVOLVED, NOT LABORD OR TRANSPORTATION EXPENSES. NOTIFICATION OF DEFECTIVE SOD MUST BE MADE WITHIN 24 HOURS OF BELIVERY, FAILURE TO NOTIFY THE TURF FARM WITHIN THE SPECIFIED TIME PERIOD CAN RESULT IN THE FARMS REFUSAL TO REPLACE THE SOD.
- 7. NO SOD SHALL BE PLACED ON SOIL WHICH HAS BEEN PREATED WITH SOIL STRUMANT OR HERBICIDES UNTIL SUPFICIENT TIME HAS ELAPSED TO PERMIT THE DISSIPATION OF TOXIC MATERIALS. THE LANDSCAPE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY LOSS OR DAMAGE TO SOD ARSING FROM IMPROPER USE OF STREILMATS OR DUE TO HIS OR HER PAULUE TO ALLOW SUFFICIENT TIME TO PERMIT DISSIPATION OF TOXIC MATERIALS, WHETHER OR NOT SUCH STREILMATS ARE SPOCHED HERBICI.

SOD INSTALLATION: (USE ONLY IF REQUESTED BY OWNER). CONFIRM WITH SOD FARM SUPPLIER DIRECTIONS FOR PROPER INSTALLATIONS.

- MOISTENING THE SOIL: AFTER ALL GRADING HAS BEEN COMPLETED, THE SOIL SHALL BE IRRIGATED WITHIN 12 TO 24 HOURS PRIOR TO LAYING THE SOD. SOD SHOULD NOT BE LAID ON SOIL THAT IS DRY AND POWDERY.
- 2. STAKTER STRP. THE FIRST ROW OF SOO SHALL BE LAID IN A STRAIGHT LINE, WITH SUBSCIQUENT ROWS PRICED PARALLE TO, AND TIGHTLY AGAINST, EACH OTHER, LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFIOWA GROWNTH AND STRENGTH. CARE SHALL BE EXERCISED TO INSURE THAT THE TURE IS NOT STRETCHED OR OVERLAMPED, AND THAT LLI JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS, WHICH WOULD CAUSE AIR DRIVING OF THE ROOTS.
- WATERING: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING SOD IMMEDIATELY DURING AND AFTER INSTALLATION TO PREVENT DRYING. IT SHALL THEN BE THOROUGHLY IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDEXBIOE OF THE NEW SOO PAD AND SOLI IMMEDIATELY BELOW THE SOD ARE THOROUGHLY WET (USUALLY 1 INCH OF WATER IS NEFOPED).

DELIVERY, STORAGE, AND HANDLING:

- DELIVER RESCHLY DIGG TREES. DO NOT PRIVILE BEFORE DELIVERY, EXCEPT
 AS APPROVED BY LANDSCAPE ARCHITECT. PROTECT BARK, BRANCHES, AN
 ROOT SYSTEMS FROM SUN SCALD, DRYING, SWEATING, WHIPPING, AND
 OTHER HANDLING AND TINING DAMAGE. DO NOT BEND OR BIND-TIE
 TREES OR SHUBBLIS IN SUCH A MANNER AS TO DESTROY NATURAL SHAPE.
 PROVIDE PROTECTIVE COVERING DURING DELIVERY. DO NOT DROP TREES
 AND SHRIBS DURING DELIVERY.
- IMMEDIATELY AFTER DIGGING BARE-ROOT STOCK, PACK ROOT SYSTEM IN WET STRAW, HAY, OR OTHER SUITABLE MATERIAL TO KEEP ROOT SYSTEM MOIST UNTIL PLANTING.
- 3 HANDLE BALLED AND BURLAPPED STOCK BY THE ROOT BALL
- DELIVER PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN
 COMPLETED AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE
 THAN 6 HOURS AFTER DELIVERY, SET PLANTS IN SHADE, PROTECT FROM
 WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
- 5. HEEL-IN BARE-ROOT STOCK. DO NOT DRY OUT ROOT SYSTEMS.
- SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, PEAT MOSS SAWDUST. OR OTHER ACCEPTABLE MATERIAL.
- DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING.
- WATER ROOT SYSTEMS OF TREES AND SHRUBS STORED ON SITE WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST CONDITION.

COORDINATION AND SCHEDULING:

- DO NOT PLANT TREES IN FROZEN GROUND OR IN STANDING WATER
- PLANT TREES AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING LAWNS, UNLESS OTHERWISE ACCEPTABLE TO LANDSCAPI ARCHITECT
- 3. WHEN PLANTING TREES AFTER LAWNS, PROTECT LAWN AREAS AND PROMPTLY REPAIR DAMAGE CAUSED BY PLANTING OPERATIONS.
- DETERMINE LOCATION OF ABOVE GRADE AND UNIDERGROUND UTILITIES AND PERFORM WORK IN A MANNER WHICH WILL AVOID DAMAGE, HAND EXCAVATE, AS REQUIRED. MAINTAIN GRADE STAKES UNTIL REMOVAL IS MUTUALLY AGREED UPON BY PARTIES CONCERNED.
- WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY LANDSCAPE ARCHITECT
- IF NOTED ON THE DRAWINGS FOR MATCHING PLANTS, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND NUMBER LABEL TO ASSURE SYMMETRY IN PLANTING.

QUALITY REQUIREMENTS

- SHADE TREES: SINGLE-STEM TREES WITH STRAIGHT TRUNK,
 WELL-BALANCED CROWN, AND INTACT LEADER, OF HEIGHT AND
 CAUPER INDICATED, CONFORMING TO ANSI Z60.1 FOR TYPE OF
 TREES REFOILIEFO
- BRANCHING HEIGHT: 1/3 TO 1/2 OF TREE HEIGHT. BRANCHING HEIGHT: 1/2 OF TREE HEIGHT.
- SMALI TREES: SMALI UPRICHT OR SPREADING TYPE, BRANCHED OR PRUNED NATURALLY ACCORDING TO SPECIES AND TYPE, AND WITH RELATIONSHIP OF CALIPER, HEIGHT, AND BRANCHING RECOMMENDED BY ANSI 260.1, AND STEM FORM AS FOLLOWS:
- FORM: SINGLE STEM.

 FORM: MULTISTEM, CLUMP, WITH 3 OR MORE MAIN STEMS.

 FORM: MULTISTEM. SHRUR, WITH MULTIPLE STEMS.



Columbus 100 Northwoods Blvd, Ste A Columbus, Ohio 43235 p 614.255.3399

Cincinnati 10816 Millington Court, Ste 118 Cincinnati, Ohio 45242 p.614 360 3066

PODdesian.net

Emerald Fields

Expansion

4040 Wyandotte Woods B Dublin, Ohio 43017

Prepared For

Mr. Matt Earman, Director City of Dublin Parks & Recreation 6555 Shier Rings Road Dublin, OH 43016

Project Info

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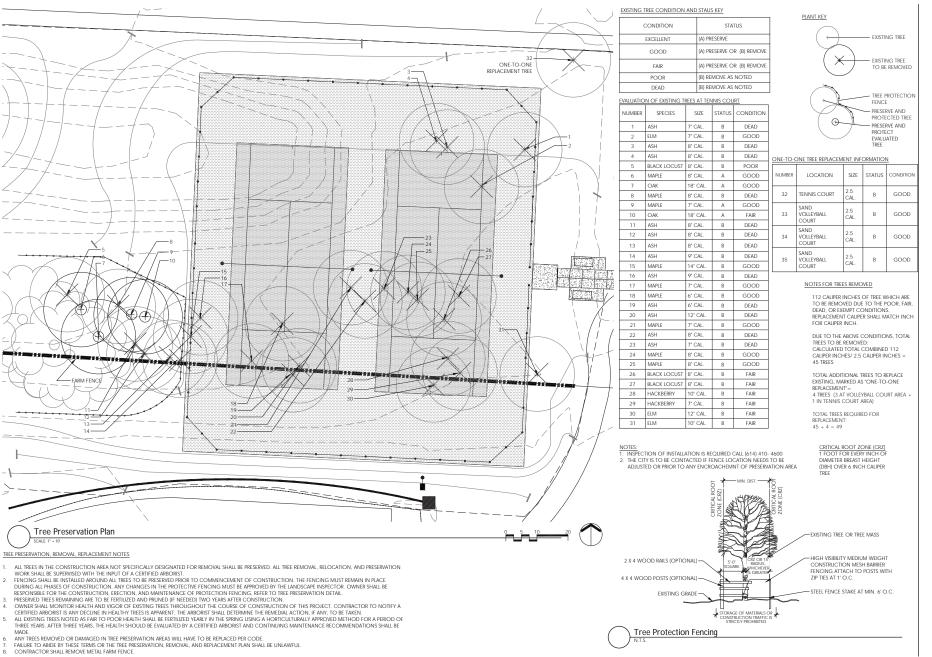
Scale Revisions

Sheet Title

PLANTING NOTES

Sheet #

4.0





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PODdesign.net

Emerald Fields Expansion

4040 Wyandotte Woods B Dublin, Ohio 43017

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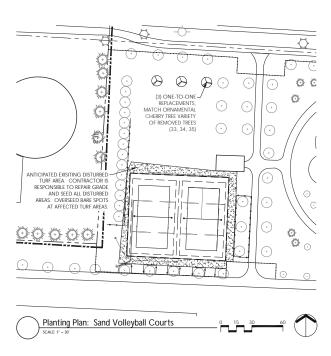
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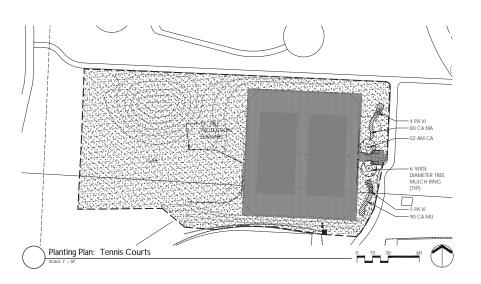
TREE
PROTECTION

PROTECTION & REMOVAL PLAN

Sheet #

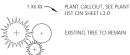
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PLANTING LEGEND

- PROPERTY LINE



EXISTING TREE TO REMAIN

EXISTING PLANT MATERIAL



PROPOSED DECIDUOUS TREE



PROPOSED EVERGREEN TREE



PROPOSED ORNAMENTAL TREE





TREE PROTECTION FENCING

PLANT INSTALLATION NOTES (REFER TO SPECIFICATIONS)

- CONTRACTOR SHALL VERIFY WITH THE OWNER AND UTILITY COMPANIES THE LOCATIONS OF THE EXISTING
 UTILITIES PRIOR TO STARTING WORK. CALL THE OHIO UTILITIES PROTECTION SERVICE AT (800) 362-2764.
 CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PROJECT.
- 2 PLANT MATERIAL SHALL RE FURNISHED IN THE QUANTITIES AND/OR SPACING AS SHOWN OR NOTED IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE
- CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL SITE ELEMENTS AND IMMEDIATELY INFORM THE OWNER AND DESIGN CONSULTANT OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ACTUAL CONDITIONS. NO WORK SHALL BE DONE IN ANY AREA WHERE THERE IS A DISCREPANCY WITHOUT OWNER'S APPROVAL
- 4 CONTACT THE OWNER TO REQUEST ELECTRONIC FILES FOR LAYOUT AND STAKING
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISH GRADING IN THE PROJECT REQUIRED TO PROVIDE A PROPER SOD AND PLANTING BED.
- 6. CONTRACTOR SHALL PROVIDE THE FOLLOWING SOIL AMENDMENTS:

SOIL AMENDMENT:
'COM-TIL' ORGANIC COMPOST (OR EQUAL) 7000 STATE ROUTE 104 SOUTH LOCKBOURNE, OHIO 43137

(614) 645-3152

SPREAD 3" OF 'COM-TIL' OVER NEW LANDSCAPE AREAS AND INCORPORATE INTO THE TOP 8" OF THE

TREES AND SHRURS-

MIX 30% 'COM-TIL' TO 70% EXISTING SOIL FROM PLANT PIT EXCAVATION. IF EXCAVATED SOIL IS NOT SUITABLE, SUPPLEMENT WITH IMPORTED TOPSOIL

TURF: SEE SPECIFICATIONS FOR TURF MIX AND SOIL PROFILE FOR EVENT TURF, NO SUBSTITUTIONS.

- ALL PLANT MATERIAL TO MEET OR EXCEED AMERICAN STANDARD FOR NURSERY STOCK, 1986 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
- 8. ALL PLANT MATERIALS SUBJECT TO INSPECTION PRIOR, DURING AND AFTER INSTALLATION. ANY PLANT NOT MEETING THE REQUIREMENTS WILL BE CAUSE FOR REJECTION BY THE OWNER. ALL REJECTED PLANTS SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE REPLACEMENT MATERIAL SHALL BE PROVIDED.
- 9. BED LINE TO BE 18' FROM BASE OF PLANT MATERIAL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- 10. ALL SHRUB AND BED AREAS TO BE MULCHED WITH TWO INCHES (2') DEPTH MINIMUM SHREDDED HARDWOOD MULCH. SUBMIT SAMPLE TO OWNER FOR APPROVAL.
- 11. ALL AREAS OUTSIDE OF PLANTING BEDS SHALL BE SODDED AS SHOWN AND NOTED
- 12. FINISHED TURF (SOD) TO BE FLUSH WITH TOP OF ADJACENT CURB OR WALK. COORDINATE WITH OWNER IN FIELD AS REQUIRED.
- 13. THE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS AND GROUND COVERS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPLACE MATERIAL WITHIN SEVEN (7) DAYS OF NOTIFICATION OF
- 14. PERFORM CLEANING DURING INSTALLATION OF LANDSCAPE WORK AND UPON COMPLETION. REMOVE FIRST USING LLEARNING LOURNING INSTRUCTION OF LEAVING AND USING AND UTON COUNTER LION, REMOVE FROM SITE ALL EXCESS LANDSCAPE RELATED MATERIAL, SOIL DEBES AND FOUR DIMENT, REPAIR DAMPER RESULTING FROM LANDSCAPING OPERATIONS. SWEEP AND HOSE DOWN PAVED SURFACES AFFECTED BY LANDSCAPING OFERATIONS. COORDINATE WITH OWNER AND OTHER CONTRACTORS FOR FINAN

PLANT LIST

	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
	TREES					
	AM CA	Amalanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	8'-10' HT.	B&B	As Shown
F	PERENNIA	LS, GROUNDCOVERS, & ORNAN	MENTAL GRASSES			
	CA MA	Carex Muskingumensis	Palm Sedge	#1	Cont.	1.5' O.C.
	PA VI	Panicum 'Northwind'	Northwind Switchgrass	#2	Cont.	3'-0" O.C



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Expansion

4040 Wyandotte Woods B Dublin, Ohio 43017

Prepared For

Mr. Matt Earman. Director City of Dublin Parks & Recreation 6555 Shier Rings Road Dublin, OH 43016

Project Info

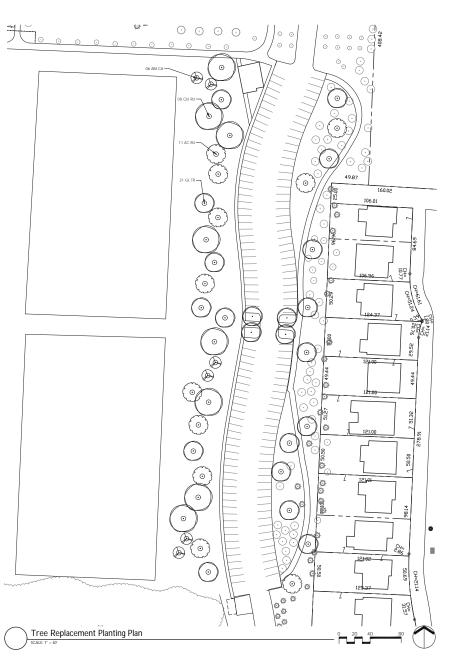
16038 08/01/17 Date SO/JD Scale As Noted

Revisions

Sheet Title **PLANTING PLAN**

Sheet #

L4.2



PLANTING LEGEND

- PROPERTY LINE

PLANT CALLOUT, SEE PLANT LIST ON SHEET L3.0



EXISTING TREE TO REMAIN

EXISTING PLANT MATERIAL



PROPOSED DECIDUOUS TREE



PROPOSED EVERGREEN TREE



PROPOSED ORNAMENTAL TREE





TREE PROTECTION FENCING

PLANT INSTALLATION NOTES (REFER TO SPECIFICATIONS)

- CONTRACTOR SHALL VERIFY WITH THE OWNER AND UTILITY COMPANIES THE LOCATIONS OF THE EXISTING
 UTILITIES PRIOR TO STARTING WORK. CALL THE OHIO UTILITIES PROTECTION SERVICE AT (800) 362-2764.
 CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PROJECT.
- 2 PLANT MATERIAL SHALL RE FURNISHED IN THE QUANTITIES AND/OR SPACING AS SHOWN OR NOTED IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE
- CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL SITE ELEMENTS AND IMMEDIATELY INFORM THE OWNER AND DESIGN CONSULTANT OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ACTUAL CONDITIONS. NO WORK SHALL BE DONE IN ANY AREA WHERE THERE IS A DISCREPANCY WITHOUT OWNER'S APPROVAL
- 4 CONTACT THE OWNER TO REQUEST ELECTRONIC FILES FOR LAYOUT AND STAKING
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISH GRADING IN THE PROJECT REQUIRED TO PROVIDE A PROPER SOD AND PLANTING BED.
- 6. CONTRACTOR SHALL PROVIDE THE FOLLOWING SOIL AMENDMENTS:

SOIL AMENDMENT:
'COM-TIL' ORGANIC COMPOST (OR EQUAL) 7000 STATE ROUTE 104 SOUTH LOCKBOURNE, OHIO 43137

(614) 645-3152

SPREAD 3" OF 'COM-TIL' OVER NEW LANDSCAPE AREAS AND INCORPORATE INTO THE TOP 8" OF THE

TREES AND SHRURS-

MIX 30% 'COM-TIL' TO 70% EXISTING SOIL FROM PLANT PIT EXCAVATION. IF EXCAVATED SOIL IS NOT SUITABLE, SUPPLEMENT WITH IMPORTED TOPSOIL

TURF: SEE SPECIFICATIONS FOR TURF MIX AND SOIL PROFILE FOR EVENT TURF, NO SUBSTITUTIONS.

- ALL PLANT MATERIAL TO MEET OR EXCEED AMERICAN STANDARD FOR NURSERY STOCK, 1986 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
- 8. ALL PLANT MATERIALS SUBJECT TO INSPECTION PRIOR, DURING AND AFTER INSTALLATION. ANY PLANT NOT MEETING THE REQUIREMENTS WILL BE CAUSE FOR REJECTION BY THE OWNER. ALL REJECTED PLANTS SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE REPLACEMENT MATERIAL SHALL BE PROVIDED.
- 9. BED LINE TO BE 18' FROM BASE OF PLANT MATERIAL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- 10. ALL SHRUB AND BED AREAS TO BE MULCHED WITH TWO INCHES (2') DEPTH MINIMUM SHREDDED HARDWOOD MULCH. SUBMIT SAMPLE TO OWNER FOR APPROVAL.
- 11. ALL AREAS OUTSIDE OF PLANTING BEDS SHALL BE SODDED AS SHOWN AND NOTED
- 12. FINISHED TURF (SOD) TO BE FLUSH WITH TOP OF ADJACENT CURB OR WALK. COORDINATE WITH OWNER IN FIELD AS REQUIRED.
- 13. THE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS AND GROUND COVERS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPLACE MATERIAL WITHIN SEVEN (7) DAYS OF NOTIFICATION OF
- 14 PERFORM CLEANING DURING INSTALLATION OF LANDSCAPE WORK AND LIPON COMPLETION. REMOVE FIRST USING LLEARNING LOURNING INSTRUCTION OF LEAVING AND USING AND UTON COUNTER LION, REMOVE FROM SITE ALL EXCESS LANDSCAPE RELATED MATERIAL, SOIL DEBES AND FOUR DIMENT, REPAIR DAMPER RESULTING FROM LANDSCAPING OPERATIONS. SWEEP AND HOSE DOWN PAVED SURFACES AFFECTED BY LANDSCAPING OFERATIONS. COORDINATE WITH OWNER AND OTHER CONTRACTORS FOR FINAN

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
TREES					
AC	Acer rubrum 'Brandywine'	Brandywine Red Maple	2.5" Cal	B&B	As Shown
AM CA	Amalanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	Multi-stem- 2.5" Cal min. stock	B&B	As Shown
GL TR	Gleditsia triacanthos f. inermis 'Skycole' SKYLINE	Skyline Honeylocust	2.5" Cal	B&B	As Shown
QU RU	Quercus rubra	Red Oak	2.5" CAL	B&B	As Shown



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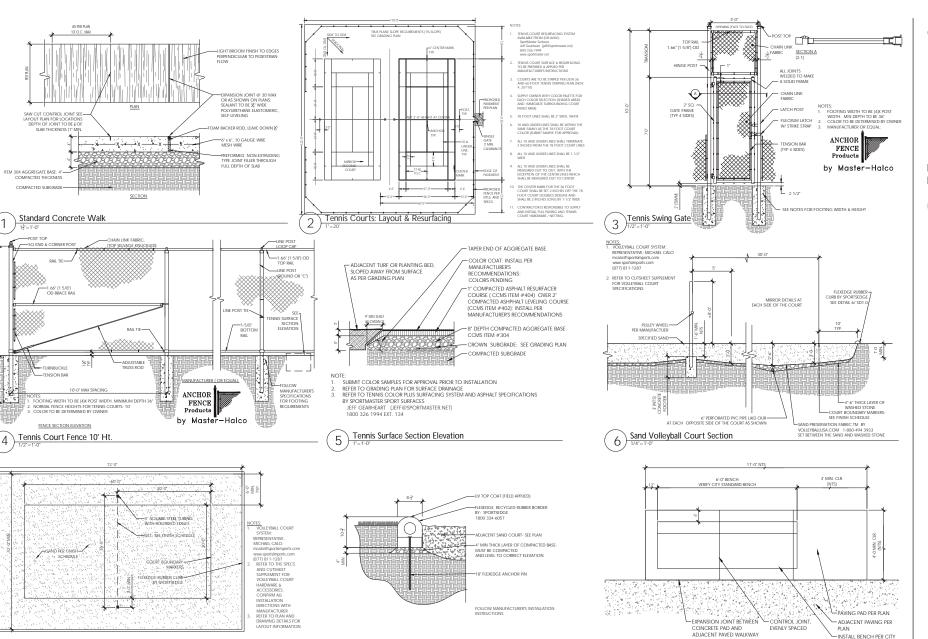
16038 08/01/17 Date SO/JD By Scale As Noted

Revisions

Sheet Title **PLANTING PLAN**

Sheet #

L4.3



Companion Seating Layout

9

Sand Volleyball Court FLEXEDGE® Curb

8

Sand Volleyball Court Plan

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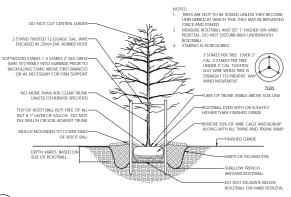
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Sheet Title

Site Details

Sheet # **SD1.0**



-DO NOT STAKE OR WRAP TRUNK MARK THE NORTH SIDE OF THE TRUNK IN THE NURSERY AND LOCATE TO THE NORTH IN THE FIELD. DO NOT CUT MAIN LEADER AND DO NOT-PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC STRUCTURAL CORRECTIONS REMOVE STRING, ROPE, TWINE AND —NELMOVE STRING, ROPE, TWINE AND WRAP FROM ROOTBALL REMOVE WIRE BASKET TO A MIN. DEPTH OF 18". LOOSEN BURLAP AROUND TREE TRUNK AND FOLD AWAY FROM TOP OF ROOTBALL. MULCH 2' DEEP, KEEP TREE TRUNK CLEAR DEPTH OF PLANT PIT TO BE 1"-2" LESS THAN HEIGHT OF ROOTBALL CONSTRUCT 6" HIGH IRRIGATION-RING CIRCLING EDGE OF TREE PIT PREPARED SOIL FOR TREES,* SEE SPECS 4"-6" DEEDED THAN POOT B SIDES, SCARIFIED TO PREVENT WATER CONTAINMENT COMPACTED EXISTING SOIL UNDER ROOTBALL TO PREVENT SETTLEMENT

-FOR CONTAINER GROWN GRASSES: LOOSEN ROOTS AT BOTTOM AND SIDES PRIOR TO PLANTING, PLACE SOIL BALL SLIGHTLY HIGHER THAN FINISH GRADE. MOUND SOIL OVER BALL. SCARFY ROOTS OF CONTAINER PLANTS

PRIOR TO PLANTING

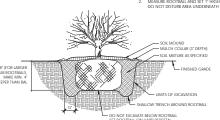
ADD FERTILIZER AS SPECIFIED

EXISTING SUBSOIL OR COMPACTED BACKFILL

THE AMOUNT OF PRUNING SHALL BE LIMITED TO 1/3 OF THE BRANCHES TO COMPENSATE FOR LOSS OF ROOTS FROM TRANSPLANTING. SEMOVE DEAD AND INJURED LIMIS. REMOVE BURILAY AND WIRE OR TWINE FROM TOP AND SIDES OF BALL. CENTER SHRUB IN HOLE. SETTOP OF BALL. 1-3' ABOVE TINSH'S GRADE.

NOTES:
1. DO NOT PRUNE SHRUBS DURING INSTALLATION

MEASURE ROOTBALL AND SET 1" HIGHER ON HARD PEDESTAL DO NOT DISTURB AREA UNDERNEATH ROOTBALL



Shrub Planting

CONTINUOUS EARTH SAUCER RIM-CAP PLANTING PIT WITH ON-SITE OR CLAY SOIL BACKFILL TO BE 75% TOPSOIL AND 25%-PEATMOSS. WATER & TAMPED TO PREVENT SETTLEMENT

Evergreen Tree Planting

PLANT LOCATION

EDGE OF WALK OR PLANTING BED-Typical Plant Spacing 6

Ornamental Grass Planting

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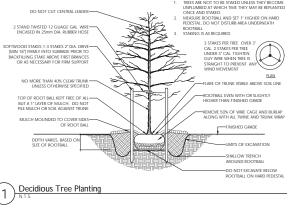
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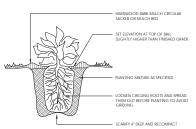
Sheet Title

Planting Details

Sheet #

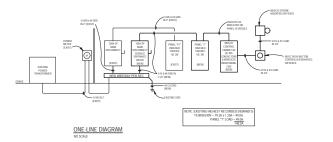
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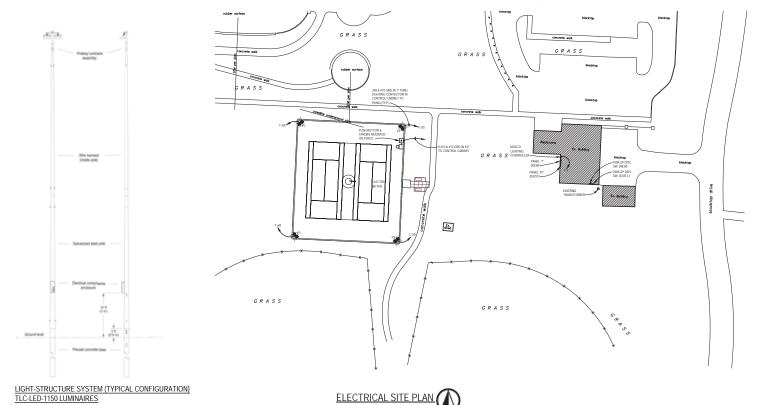
SEE PLANTING NOTES FOR MULCH TYPE AND DEPTH, TYP.

Perennial Planting



LOAD DESCRIPTION	VA	CEP	NO.	PN	NO.	CBP	VA.	LOAD DESCRIPTION
CONTROL CABINET	200	200	1	A	2	202	1150	POLE AND LIGHTS
POLE AND LIGHTS	1150	200	3		4	1	1150	1
	1150	1	5	A	6	202	1150	POLE AND LIGHTS
POLE AND LIGHTS	1150	200	7			1	1150	1
	1150	1	9	A	30	202	-	SPARE
SPARE		202	11		12	1	-	1
	-	1	13	A	14	201	-	SPARE
SPACE			15		15	-	-	SPACE
SPACE			17	A	10	-	-	SPACE
SPACE	-		19		20	-	-	SPACE
SPACE	-		21	A	22	-	-	SPACE
SPACE			23		24	-	-	SPACE
SPACE			25		26	-	-	SPACE
SPACE	-		27	A	20	-	-	SPACE
SPACE			29		30	-	-	SPACE
DEMAND LOAD: 9400040 - 392A X 1.25 - 490A				- 1		ED LOAD:	PHI	ASE A 4000 W ASE B 4000 W

I		LIGHTING	FIX	TURE	SCHEDU	LE
ı	MARK	DESCRIPTION	VOLT	LAMP	MOUNT	MANUFACTURER
ı	P1	(2) LED FIXTURES ON 40 POLE, 5760K, 75CRI	240	1150W LED	CONCRETE BASE	MUSCO TLC-LED-1150



(POD) design

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Revisions

Sheet Title

ELECTRICAL SITE PLAN

Sheet #

SECTION 26 56 68 - EXTERIOR ATHLETIC LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS SECTION, APPLY TO WORK OF THIS SECTION.

1.2 SUMMARY

- A. THE PURPOSE OF THESE SPECIFICATIONS IS TO DEFINE THE PERFORMANCE AND DESIGN STANDARDS FOR EMERALD PARK TENN LICHTING. THE MANUE ACTURER / CONTRACTOR SHALL SUPPLY LIGHTING EDURPMENT TO MEET OR EXCEED THE STANDARDS SET FORTH BY THE CRITERIA WITHIN THESE SPECIFICATIONS.
- B. PROVIDE ALL NECESSARY EQUIPMENT, AS DETAILED ON DRAWINGS AND SCHEDULES, FOR A COMPLETE LIGHTING AND CONTROL
- C. THE WORK INCLUDED UNDER THIS SPECIFICATION SHALL COVER ALL LABOR, MATERIALS, AND EQUIPMENT TO FURNISH THE LIGHTING CONTROL SYSTEM HEREIN SPECIFIED.

D. THE PRIMARY GOALS OF THIS SPORTS LIGHTING PROJECT ARE:

- GUARANTEED LIGHT LEVELS: SELECTION OF APPROPRIATE LIGHT LEVELS IMPACT THE SAFETY OF THE PLAYERS AND THE ENJOYMENT OF SPECIATIONS. THEREFORE THE LIGHTING SYSTEM SHALL BE DESIGNED SUCH THAT THE LIGHT LEVELS ARE GUARANTEED FOR A PERIOD OF 35 YEARS.
- ENVIRONMENTAL LIGHT CONTROL: IT IS THE PRIMARY GOAL OF THIS PROJECT TO MINIMIZE SPILL LIGHT AND GLARE ON NEIGHBORING PROPERTIES. THE LED LIGHTING SYSTEM SHOULD PROVIDE BETTER SPILL AND GLARE CONTROL THAN HID
- LIFE CYCLE COST: IN GROBER TO REDUCE THE OPPRATING RUDGET, THE PREFERBED LIGHTIMG SYSTEM SHALL BE ENERGY
 FERROLDER AND COST EFFECTIVE TO OPPRATE. ALL MANTENINANCE COSTS SHALL BE LIMMANTED, AND THE FELLOGS SHOULD BE
 FERROLLINEARY SHOUNDED TO CREIT CEFFERD GROSE SOURCE AS YOUR EVEN EVEN EVEN CYCLE TO AND THE OPPRATISE LIGHT OF THE PROJECTIVE OF REPORT OF THE RESOURCES AND AND UNMERCED OPPRATION OF THE FACILITY, CUSTOMER REQUIRES A REMOTE OWNER CONTINUE. SYSTEM
 FOR THE LIGHTING SYSTEM.
- TOWN THE LIGHTHMUS PERSON. TO ALLOW FOR OPTIMIZED USE OF LABOR RESOURCES AND AVOID UNNEEDED OPERATION OF THE FACILITY, CUSTOMER REQUIRES A REMOTE DWIDSF CONTROL SYSTEM FOR THE LIGHTING SYSTEM, FIELD(S) SHOULD BE PROMOTIVED WINDOMORD TO DETECT FORTURE CUTINES OVER A 5Y YEAR HE SECUL

1.3 LIGHTING PERFORMANCE

APPEARANCE RECIPIENTES. A TAMES DE ACES DANS LE EL TEL DA MERCHE LES LITELLES LES DEFORMETS AS SECRETARISMO DE LA CONTROLLA DE

		Myemento		
	Average Target	Minimum	One	
Anna of Lighting	Eight Lowis	Lindorney Balon	Penti	Grid Spinon
Tarress counts	10 look-candles	20.1	30	20' + 20'

- PHOTOMETRIC CHARACTERISTICS: MANUFACTURER SHALL SUBMIT LAMP DATA SHEET LISTING LUMEN MAINTENANCE PER IES
 TM-21-11.
- C. LIGHT ENITTING DIODES (LED) CHARACTERISTICS:
- ALL PRODUCTS SHALL BE TESTED BY A NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (INVLAP) ACCREDITED PHOTOMETRY LABORATORY AND SHALL CARRY A UL OR ETL LABEL.
- 2. COLOR TEMPERATURE SHALL BE 5700K
- 3 COLOR RENDERING INDEX (CRI): MINIMUM CRI OF 75 4. ALL LED COMPONENTS SHALL BE MERCURY AND LEAD-FREE
- D. MOUNTING HEIGHTS: TO ENSURE PROPER AMING ANGLES FOR REDUCED GLARE AND TO PROVIDE BETTER PLAYABILITY, POLE HEIGHTS SHALL BE AS IDENTIFIED ON PLAYS.
- E. PROJECT REFERENCES: MANUFACTURERS MUST PROVIDE PROJECT REFERENCES FOR OUTDOOR INSTALLATIONS THAT HAVE BEEL COMMETTED UTLIZING THIS EXACT TECHNOLOGY: MANUFACTURER WILL INCLIDE PROJECT NAME, PROJECT CITY, AND IF REQUEST CONTACT MARE AND CONTACT THONE NUMBER TO BE CHO REFERENCE. A IMMMMM OF IN DEFERENCES IS PREFERED.
- F. PROJECT SPECIFICS: REFER TO DRAWINGS FOR NOTES LISTING ADDITIONAL PROJECT SPECIFIC REQUIREMENTS.

1.2 ENVIRONMENTAL LIGHT CONTROL

- LIGHT CONTROL LUMINAIRES: ALL LUMINAIRES SHALL UTILIZE SPILL LIGHT AND GLARE CONTROL DEVICES INCLUDING, BUT NOT
 LIMITED TO, INTERNAL SHELDS, LOUVERS AND EXTERNAL SHIELDS. NO SYMMETRICAL BEAM PATTERNS WILL BE ACCEPTED.
- B. PROPERTY LINE: THERE ARE RESIDENTIAL PROPERTIES LOCATED ON EAST AND WEST SIDE OF FIELD, AND THE OWNER WANTS TO MINIMIZE SPILL LIGHT AND GLARE ON NEIGHBORING PROPERTIES. ALL SPILL LIGHT CALCULATIONS SHALL BE RUN WITH AN ELEVATION OF (+3FT) WITH GRID POINTS AT 30 FT INTERVALS ALONG THE ENTIRE PROPERTY LINE.
- C. SPILL LIGHT AND GLARE CONTROL: TO MINIMIZE IMPACT ON ADJACENT PROPERTIES, SPILL LIGHT AND CANDELA VALUES SHALL BE MINIMIZED. SUBMIT BUTTOMETER OF DEPORT WITH MAY CANDELA VALUES AT 1.14°.

SPEL & GOAR RECEIREMENTS	Meetings
Property Line Max Candela, submit photometric report with vertical cambrin values at 110°	15,000 Carolista

1.5 ACTION SUBMITTALS

A PRODUCT DATA:

PROVIDE DOCUMENTATION AS REQUIRED BY 'DESIGN SUBMITTAL CHECKLIST - 26 56 68 - EXTERIOR ATHLETIC LIGHTING' ON THE LAST PAGE OF THIS SPECIFICATION SECTION.

PROVIDE DOCUMENTATION AS REQUIRED BY 'DESIGN SUBMITTAL CHECKLIST - 26 56 68 - EXTERIOR ATHLETIC LIGHTING' ON THE LAST PAGE OF THIS SPECIFICATION SECTION.

1.6 CLOSEOUT SUBMITTALS

- A. OPERATION AND MAINTENANCE DATA: CLOSEOUT SUBMITTAL SHALL INCLUDE OPERATION, INSTALLATION AND SPECIFICATION DATA IN CLOSEOUT SUBMITTALS.
- B. WARRANTY DURATION AND REPLACEMENT POLICY.
- 1.7 QUALITY ASSURANCE
- A. SOURCE LIMITATIONS: OBTAIN POLES, LUMINAIRES, WIRE HARNESSES, ELECTRICAL COMPONENTS ENCLOSURE, AND CONTROLS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
- B. THE MANUFACTURER SHALL HAVE BEEN PRODUCING LIGHTING SYSTEMS AND CONTROL EQUIPMENT FOR AT LEAST TEN CONSECUTIVE

- A 25 YEAR WARRANT! MANEACTMERS SHALL SUPPLY A SCREED WARRANT! COVERING THE ENTIRE SYSTEM FOR 25 YEARS FROM THE DIGHT OF SHIMMENT WARRANT SHALL COMMUNITIES SHOUTHD LIGHT LETTLE MANEACTMERS SHALL MANEAUTH OCES. NOT COVER WATHER COMMUNICATION CHANGES AND ASSESSED AND THE OF THE WARRANT FOR THE FILL TISM, MEMBATY OCES. NOT COVER WATHER COMMUNICATION CHANGES AND ASSESSED AND ASSESSED AND ASSESSED AND ASSESSED AND ASSESSED ASSESSED AND ASSESSED ASSESSED.
- MANTENANCE IMMERACTHERS SHALL MONITOR THE RESPONSANCE OF THE LISENTING STORTEN. INCLUDING OWNER STATUS, HOUSE OF USEG, AND LIMMINGE CUTAGE FOR 25 YEARS FROM THE DATE OF FOURHEIST SHIPMENT, MONITORILL LIMMINGE CUTAGES SHALL BE REPARTED THESE THE USINGE OF ANY FIELD IS INSTERNALLY IMPACTED. COMMER ARRESTS TO OHICK FUSES IN THE EVENT OF A LIMMINGE CUTAGE.
- D. THE LIGHTING CONTACTOR CABINET SHALL BE COVERED FOR THE 25-YEAR WARRANTY PERIOD.

PART 2 - PRODUCTS

A. ALL COMPONENTS SHALL BE LISTED BY UL OR EQUIVALENT INDEPENDENT TESTING LABORATORY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

A ITS THE MEIBT OF THESE SPECIFICATIONS THAT THE SPORTS FEEL DIGHTING SYSTEMAND THE SPORTS FEEL DIGHTING CONTROL
AND MONITORING SYSTEM MANAFACTURER IS THE SAME MANAFACTURER IN CORDIN TO HAVE A COMPLETE SPORTS FEEL DIGHTING
SYSTEM AND CONTROL. SYSTEM FAVOR. ADMINISTRATION FARE SHEVE, IS REQUIRED, YET REASON
MANAFACTURE OF SPORTS LIGHTING COMPRIENT AND LIGHTING CONTROL. COMPRIENT AND ANCILLARY EXQUIPMENT, OF THESE AND
CARACTERS (SEESANCE OF PROVINGE THE REQUIRED TRANSFORMED). MONEY PROCEDURES WERE SEEN A STIFFACTION VISE IN SIMLAR SERVICE FOR NOT LESS THAN 10 YEARS.

B. BASIS OF DESIGN MANUFACTURER:

- C. ALTERNATE MANUFACTURERS:
- SUBSTITUTION REQUEST REQUIRED: SUBMIT LIGHTING DESIGN WITH BLANKET GRID TO ZERO FOOTCANDLES, PHOTOMETRIC REPORT, AND PRODUCT INFORMATION (ITEMS B, C, D, & K OF SUBMITTAL CHECKLIST).

- A. SYSTEM DESCRIPTION: LIGHTING SYSTEM SHALL BE DESIGNED AND MANUFACTURED AS A SYSTEM AND CONSIST OF THE FOLLOWING:
- GALVANIZED STEEL POLES AND CROSS ARM ASSEMBLY, DIRECT BURIED STEEL POLES, WHICH UTILIZE THE EXTENDED PORTON
 OF THE STEEL SHAFT FOR THEIR POUNDATION WILL NOT BE ACCEPTED DUE TO POTENTIAL FOR INTERNAL AND EXTERNAL
 CORROSIVE REACTION TO THE SOLD AND LOWN GETBUR PERFORMANCE CONCERNS.
- CHROSOME RAPLIES IN THE SUBJECT AND LINKS IN THE PROPRIES CONTROLLED CONTROLL
- 3. ALL LUMINAIRES, VISORS, AND CROSS-ARM ASSENBLIES SHALL WITHSTAND 150 MPH WINDS AND MAINTAIN LUMINAIRE AIMING ALL CAMBENT. 4. MANUFACTURER WILL REMOTE ALL DRIVERS AND SUPPORTING ELECTRICAL EQUIPMENT IN ALUMINUM ENCLOSURES MOUNTED
- APPROXIMATELY TO FEET ABOVE GRADE. THE ENLOSURES SHALL BE FOUCH-SAFE AND INCLIDE DRIVERS AND PLISING WITH INDICATOR LICHES ON PLISES TO NOTEY WHEN A PLISE IS TO BE REPLACED FOR EACH LUMMARIE. DISCONNECT PER CIRCLIF FOR EACH POLE STRUCTURE WILL BE LOCATED IN THE ENCOSURE. WITEGRAD, DISPRET KITHES WILL NOT BE ACCEPTED.
- WIRE HARNESS COMPLETE WITH AN ABBASION PROTECTION SLEEVE, STRAIN RELIEF AND PLUG IN CONNECTIONS FOR FAST, TROUBLE FREE INSTALLATION.
- 6. CONTROLS AND MONITORING CARMET TO PROVIDE ON OF CONTROL AND MONITORING OF THE LIGHTMOS SYSTEM, CONSTRUCTED OF BEACH TYPE 4. ALMINAM. COMBINICATION METHOD SHALL SE PROVIDED BY MANKE ACTIVISED. CHARMET SHALL CONTRAIN CUSTOM CONFIDENCE CONTROL COMPOULTS FOR 30, 40, 400 A MARY, LAURELT DUMANT HET DUMANDESS AND ELECTROL RESIDES. MANALL OF FOR AUTO SELECTION SWITCHES SHALL BE PROVIDED. REFER TO DRAWNINGS AS THESE SELECTION SWITCHES WAS RE REMINED.

- ACTURING REQUIREMENTS: ALL COMPONENTS SHALL BE DESIGNED AND MANUFACTURED AS A SYSTEM. ALL LUMINAIRES, WIRE SSES, BALLAST AND OTHER ENCLOSURES SHALL BE FACTORY ASSEMBLED, AIMED, WIRED AND TESTED.
- C. DURABILITY: ALL EXPOSED COMPONENTS SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIAL AND/OR COATED TO HELF DIABILITY, ALL DRYGIS COMPONISTS SANL IS CONSTRUCTION OF CORRECOND RESISTANT MUTERAL ARROR CONTROL TO HELP PREVENT CORRECORD ALL DEVISOR LORGENISTS, SANL IS HE FOR FOR CHARGET PER ART MAY SAIL PROPER SALLARISM AND PROP
- DESIGNATION MANAGEMENT DATE THE MANAGEMENT DATE OF THE MATERIAL DESIGNATION CONTRIBUTION CONTRIBUTION OF THE MATERIAL DATE OF THE MATERIAL DATE.
- E SACETY, ALL SYSTEM COMPONENTS SUALL BE III LISTED FOR THE ADDRODUSTS ADDLICATION

- A. INSTANT ON/OFF CAPABILITIES: SYSTEM SHALL PROVIDE FOR INSTANT ON/OFF OF LUMINAIRES.
- BAILDER LUCHER CONTRO STATE SOTTE SOLIT UND LEUKO DIRECTORISM SIN LEUKONT CORE DI CHELLA CREFT STATILDERS DIANNO MENI DIST. PROFE NO CON LIBAR D'INTI TIVEN DE ADVOIRE MANIFESTE SOLIT SOLITORISM SIN DIANNO MANTINA, I TOURNET CHE PI COMMANDATO, INTERNED STATE SOLIT SE RAIN ELL VITO FROME CONTRIBUS DE PROFE AND ACSST UNE PROFETONIO MELS. THE CHEMBER MASSOUL WASCE SOLICITATION STOCKERS FOR PROFETONIE FILED STATE SOLITORISM SE EL FIGURE TO ALLORA RAINGE OF PROFETOS SOLICIA FILE SOFENIA COMPARIES FOR ALL FILES SOLIT SOLITORISM SE EL FIGURE TO ALLORA RAINGE OF PROFETOS SOLICIA FILE SOFENIA COMPARIES FOR ALL FILES SOLITORISM PERSONSONI DOCUMENT CHARLOFF COMMANDE FORMES. SOLITICATION CON SALIE ALLORANCE.
- C. REMOTE MONITORING SYSTEM. SYSTEM SHALL MONITOR LIGHTING PERFORMANCE AND NOTFY MANUFACTURER IF INDIVIDUAL LUMINARIE OUTAGE IS DETECTED SO THAT APPROPRIATE MANTENANCE CAN BE SOFEDUED. THE CONTROLLER SHALL DETERMINE SWITCH POSTION (MANUAL OR AUTO) AND CONTACTOR STATUS (OPEN OR CLOSED).
- D. MANAGEMENT TOO, SEMENATIONER SHALL PROVIDE A RESEARCH DATASET AND DASPEDING TOO, OF ACTUAL PIEL DEVICE AND PROVIDE RESEARCH DATASET AND DASPEDING TOO, OF ACTUAL PIEL DEVICE AND PROVIDE RESEARCH TANGED THE PROVIDE RESEARCH TO THE PROVIDED THE PROVIDED SHALL AND SHALL AND SHALL THE PROVIDED SHALL THE FOR ICE, AMERICO AND SHALL CHEETERS.
- E. HOURS OF USAGE: MANUFACTURER SHALL PROVIDE A MEANS OF TRACKING ACTUAL HOURS OF USAGE FOR THE FIELD LIGHTING SYSTEM THAT IS READILY ACCESSIBLE TO THE OWNER. CUMULATIVE HOURS SHALL BE TRACKED TO SHOW THE TOTAL HOURS USED BY THE FACILITY, REPORT HOURS SWED BY USING DRAY OF FAIR USH BUTTONS BY USERS.
- F. COMMUNICATION COSTS: MANUFACTURER SHALL INCLUDE COMMUNICATION COSTS FOR OPERATING THE CONTROLS AND MONITORING SYSTEM FOR A PERIOD OF 2S YEARS.

2.5 STRUCTURAL PARAMETERS

- F. SUPPORT STRUCTURE WIND LOAD STRENGTH-POLES AND OTHER SUPPORT STRUCTURES, BRACKETS, ARMS, BASES, CAGES, ANCHORAGES AND POUNDATIONS SHALL BE DETERMINED BASED ON THE 2011 OHIO BUILDING CODE, WIND SPEED OF 90, EXPOSURE CATEGORY CAD ON MINIBITATIVE FACTION OF 10.
- G. STRUCTURAL DESIGN: THE STRESS ANALYSIS AND SAFETY FACTOR OF THE POLES SHALL CONFORM TO AASHTO 2001 (LTS-4) STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARES AND TRAFFIC SIGNALS.
- FOUNDATION DRAWINGS. PROJECT SPECFIC FOUNDATION DRAWINGS STAMPED AND SIGNED BY A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF OHIO ARE REQUIRED. THE FOUNDATION DRAWINGS MUST LIST THE MOMENT, SHEAR (HORIZONTAL) FORCE, AND AND (KETRICAL) FORCE AT GROUND LEVEL FOR EACH FOLE.

EQUIPMENT ON-SITE: THE EQUIPMENT MUST BE ON-SITE 8-TO WEEKS FROM RECEIPT OF APPROVED SUBMITTALS AND RECEIPT OF
COMBLETE ORDER INFORMATION.

- A ILLIMINATION MEASUREMENTS UPON SUBSTANTIAL COMPLETION OF THE PROJECT AND IN THE PRESENCE OF THE CONTRACTOR, PROJECT ENCINEER, OWNERS REPRESENTATIVE, AND MANUFACTURERS REPRESENTATIVE, ILLIMINATION MEASUREMENTS SHALL BE
- B. CORRECTING KON-CONFORMANCE: IF, IN THE OPNION OF THE OWINER OR HIS AMPOINTED REPRESENTATIVE, THE ACTUAL PREFORMANCE LEVELS INCLUDING FOOT CANDLES, WINFORMITY BATIOS, AND MAXIMUM BILLOWATT CONSUMPTIONS ARE NOT IN CONFORMANCE WITH THE RECURRENANCE OF THE PREFORMANCE SPECIFICATIONS AND SUBMITTED INFORMATION, THE CONTRACTORMANUFACTURER SHALL BE LIABLE TO ANY OR ALL OF THE FOLLOWING.
- INTERNAL INDIRECTIONS AND THE LIBERT OF ANY OFFICE ALL OF THE FALLOWING.

 CONTRICTION MANY CHARGES SHALL ARE SPECIALS FROM THE MASTELL ANY MECESSARY ADDITIONAL FIRST STO MEET.

 THE MINIMAL LICHTING STANLANDS. THE MANUFACTURES SHALL AS DETRIES REFLACE THE DISKTING POLES TO MEET THE NEW
 MINICAD DEPTH OF SECREMENTS OF WESTER OF CERTIFICATION BY A LICENSED STRUCTURAL ENGINEER THAT THE EXISTING
 POLES WILL WITHSTAND THE ADDITIONAL WIND LONG.
- 2. CONTRACTORMANUFACTURER WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE FIELD OR TRACK DURING THESE REPAIRS. CONTRACTORMANUFACTURER SHALL REMOVE THE ENTIRE UNACCEPTABLE LIGHTING SYSTEM AND INSTALL A NEW LIGHTING SYSTEM TO MEET THE SPECIFICATIONS.

Design Submittal Checklist - 26 56 68 - Exterior Athletic Lighting

related.	Tab	Non	Description
	4	Cheridal	A 64 of all information being submitted shall be included on the labbuilt profess. List the name of the manufacturer's local supresentative and his/fee phone municial. Include agreed eater that charakter.
	¥	On Florid Lighting Change	Light of people through streets of the control of t
	¢	Of Fact Lighting Sheapt	I gifting datago reviewing selecting stilled spot agest severe along the programs their assumption is another. If all individualities of payd termine shall be belieful as Double about strongers of shadings what his interest with the motion of extraction and belieful projects are aloned included for most anones care in figure.
	0	Plutometro Papart	Manufacture end automicing page of physiomolox record for all unknown looks being proceed armining precision familiations as administ by USDAR Publications (36.00.00 Physiometric lasts areal for and find by laboratory with current failured Volunters (automoting Automotination Program or an redujershaft failing (AUTy with over 2 years Assertance).
	1	Namenty & Partiername Stuarantes	Provide written warrants otherwisten mobiling all forms and conditions de especifici or medicar 1.8. Include politicinates guarantee including a written commitment to orderides git connections recipies to heal the performance reportmentate code on those geometricities and or opposed to the connections.
	1	Life Corp. Cod. Colonianos	Despite it TV optic and consistents as defined in the specification. Veriffy prengy ands for operating the submission, neutronous over for the specification pool ways represented, and gates through pools. All other should be a seen on TV operating the property pools. All other should be a seen on TV operating all the set of DV if yet well.
	В	Streture Carocations	Price structure contractors and foundation-design showing foundation shape leaded registered to, relies and another lastes of meaning. Design most be strenged by a effective impressor in the state of Oncolor agent but in a state 2.3.
	*	Dodráveli Markong	Majorations still provide within celebration and submedicts for automated control system is reclude municipal. They will also provide managine of system recording and assess file numbers followed in provide must be applied.
	14	Project Bulleroncom	Manufacturer's: provide a list of projects in the state of Chris and summanding states where the sectioning project from board visible as appetited at account 3.3.0
	4.	Pokal Hemiter	Complete set of probed provious for all components, including particles and U.C. Lebings.
	¥	Non- Completion	Manufacturer shall fell all familia find also not comply with the specifications.
	н	Constante	Manufacturer shall sup of that or requestion to the equationists have been real at that the manufacturer of the requestrials for any factor could counted to bring that experient any completion to all dame not making approximations and contribute to their to the 1st - Non-Openium.



Columbus 100 Northwoods Blvd, Ste A Columbus, Ohio 43235 p 614.255.3399

Cincinnati 10816 Millington Court, Ste 118 Cincinnati, Ohio 45242

PODdesign.net

Project Name Emerald Fields Expansion 4040 Wyandotte Woods B Dublin, Ohio 43017



Prepared For Mr. Matt Farman. City of Dublin Parks & Recreation 6555 Shier Rings Road Dublin, OH 43016

Project Info Project # 16038 Date 08/1/17 By SF/JD By SF/JD Scale As Noted

Revisions

Sheet Title

ELECTRICAL SPECIFICATION

Sheet #



Project Specific Notes:

assembly kit This service includes a pushbutton/strobe

Project Information

Scan: Date: Sales Representative Control Voltage: Design Voltage/Hertz/Phase: Total # of Distribution Panel Locations for Project: Distribution Panel Location or ID: Document ID: Control System Type: Project Engineer: Project Name: Communication Type: Project #: **Emerald Park Tennis Courts** 186923P1V1-0620095851 Control and Monitoring Digital Cellular John Kaufman 186923A 06/20/17 480/60/3 BTaylor 186923 120

Equipment Listing

DESCRIPTION Control and Monitoring Cabinet APPROXIMATE SIZE 24 X 48

Total Contactors Total Off/On/Auto Switches QTY

30 AMP

SIZE

Materials Checklist

A single control circuit must be Contractor/Customer Supplied:

- supplied per distribution panel location. If the control voltage is NOT available
- Electrical distribution panel to provide overcurrent protection for circuits a control transformer is required

genenized

- Summary by Zone Chart sized per full load amps on Circuit Thermal/Magnetic circuit breaker
- Wiring:
- Dedicated control power circuit
- contactors Power circuit to and from lighting
- Harnesses for cabinets at remote
- ground protection Means of grounding, including lightning
- Electrical conduit wireway system Entrance hubs rated NEMA 4:
 Entrance hubs rated NEMA 4:
- Mounting hardware for cabinets copper-free die-cast aluminum
- Anti-corrosion compound to apply to ends of Control circuit lock-on device to prevent unauthorized power interruption to control

wire, if necessary

at 877/347-3319 to schedule activation of the Note: Activation may take up to 1 1/2 hours control system upon completion of the installation. Call Control-Link Central ™ operations center

IMPORTANT NOTES

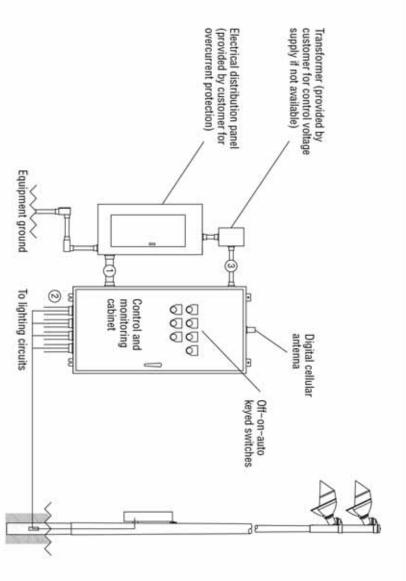
- 1. Please confirm that the design voltage listed above is accurate for this your Musco sales representative to confirm this item. design voltage/phase can result in additional costs and delays. Contact and utilized at each lighting pole's ballast enclosure disconnect. facility. Design voltage/phase is defined as the voltage/phase being connected Inaccurate
- 2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase phases across the entire facility. design is used Musco's single phase luminaires come pre-wired to utilize all 3
- ω One contactor is required for each pole. When a pole has multiple circuits, one published continuous load. All contactors are 3 pole. contactor is required for each circuit. All contactors are UL 100% rated for the
- 4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
- <u>о</u> 0 A single control circuit must be supplied per control system. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

NOTE: Refer to Installation Instructions for more details on equipment information and the installation requirements



Emerald Park Tennis Courts / 186923 - 186923A E1 - Page 2 of 4

Control·Link. Control and Monitoring System



Wire	Description	# or Wires	Size (AWG)	Length (FT)	Musco	Notes
-	Line power to contactors, and equipment grounding conductor	Note A	Note B	27	No	A - E
N	Load power to lighting circuits	Note A	Note B	N/A	No	A - D
ω	Control power (dedicated, 20A)	ω	12	N/A	No	C, D

R60-32-00_C

Notes:

- wbcmb
- Voltage and phasing per the notes on cover page.
 Calculate per load and voltage drop.
 All conduit diameters should be per code.
 All conduit diameters should be per code.
 Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.
 Contact Musco if maximum wire length from circuit breaker to contactor exceeds value in chart.

IMPORTANT: Control (3) wires must be in separate conduit from line and load power wiring (1, 2).



Emerald Park Tennis Courts / 186923 - 186923A E1 - Page 3 of 4

SWITCHING SCHEDULE

Field/Zone Description Z Tennis-1 1

Zones 1

	CIRCUIT SUMMARY BY ZONE	UMMAR	Y BY Z	ONE			
POLE	CIRCUIT DESCRIPTION	# OF	# OF	*FULL	CONTACTOR	CONTACTOR ZONE	ZONE
		FIXTURES DRIVERS	DRIVERS	LOAD	SIZE (AMPS)	₽	
Т1	Tennis-1	2	2	5.3	30	C1	_
T2	Tennis-1	2	2	5.3	30	C2	_
Т3	Tennis-1	2	2	5.3	30	СЗ	_
Т4	Tennis-1	2	2	5.3	30	C4	_
*	*E.III and Ampa based on ampa par driver						

^{*}Full Load Amps based on amps per driver.



Emerald Park Tennis Courts / 186923 - 186923A E1 - Page 4 of 4

	CABINET	#					
	CONTROL	MODULE	OCATION	1		1	
	CONTACTOR	₽		C1	C2	S	C
PANEL SUMMARY	CIRCUIT DESCRIPTION			Pole T1	Pole T2	Pole T3	Dolo T/
	FULL	LOAD	AMPS	5.25	5.25	5.25	E 0E
	DISTRIBUTION	PANEL ID (BY	OTHERS)				
	CIRCUIT	BREAKER	POSITION (BY				

		ZONE SCHEDULE		
			CIRCUIT	CIRCUIT DESCRIPTION
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
Zone 1	1	Tennis-1	T1	C1
			T2	C2
			Т3	СЗ
			T4	C4

Emerald Park Tennis Courts

Dublin,OH

Lighting System

Pol	le / Fixture	Summary					
	Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Group
	T1-T4	40'	40'	2	TLC-LED-1150	2.30 kW	А
	4			8		9.20 kW	

Group Summ	ary		
Group	Description	Load	Fixture Qty
A	Tennis	9.2 kW	8

Fixture Type Summary							
Туре	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1150	LED 5700K - 75 CRI	1150W	121,000	>51,000	>51,000	>51,000	8

Light Level Summary

Calculation Grid Summar	У						
Grid Name	Calculation Metric	Ave	Illumii Min	nation Max	Max/Min	Groups	Fixture Qty
Tennis-1 Spill	Horizontal Illuminance	0	0	0	0.00	А	8
Tennis-1 Spill	Max Candela Metric	42.3	0	337	0.00	Α	8
Tennis-1 Spill	Max Vertical Illuminance Metric	0	0	0.01	0.00	А	8
Tennis-1	Horizontal Illuminance	57.9	53	63	1.20	А	8

From Hometown to Professional



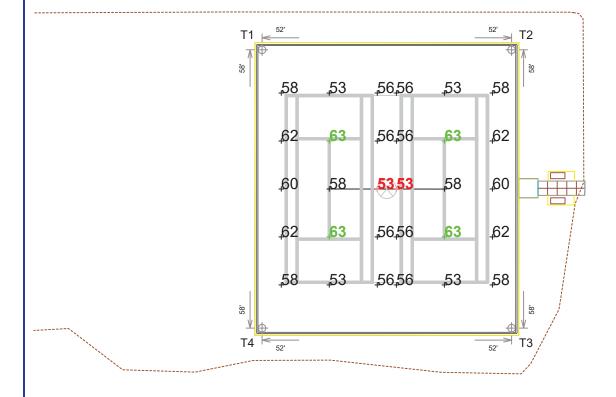


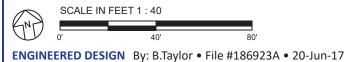






EQI	UIPMENT LI	ST FOR	AREAS SH	lown				
	Р	ole			Luminaires			
OTY	LOCATION	SIZE	GRADE	MOUNTING	LUMINAIRE	QTY /	THIS	OTHER
٠	200/111011	O.L.L	ELEVATION	HEIGHT	TYPE	POLE	GRID	GRIDS
4	T1-T4	40'	-	40'	TLC-LED-1150	2	2	0
4			TOTALS			8	8	0





Emerald Park Tennis Courts

Dublin,OH

GRID SUMMARY	
Name:	Tennis-1
Size:	2 Court - 12' Spacing
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION S	UMMARY				
MAINTAINED HORIZONTA	AL FOOTCANDLES	S			
	Entire Grid				
Guaranteed Average:	50				
Scan Average:	57.85				
Maximum:	63				
Minimum:	53				
Avg / Min:	1.10				
Guaranteed Max / Min:	2				
Max / Min:	1.20				
UG (adjacent pts): 0.00					
CU: 0.87					
No. of Points:	30				
LUMINAIRE INFORMATIO	N				
Color / CRI:	5700K - 75 CF	RI			
Luminaire Output:	121,000 lume	ens			
No. of Luminaires:	8				
Total Load:	9.2 kW				
			en Maintenance		
Luminaire Type	L90 hrs	L80 hrs	L70 hrs		
TLC-LED-1150	>51,000	>51,000	>51,000		
Reported per TM-21-11.	See luminaire da	tasheet for detai	ls.		

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

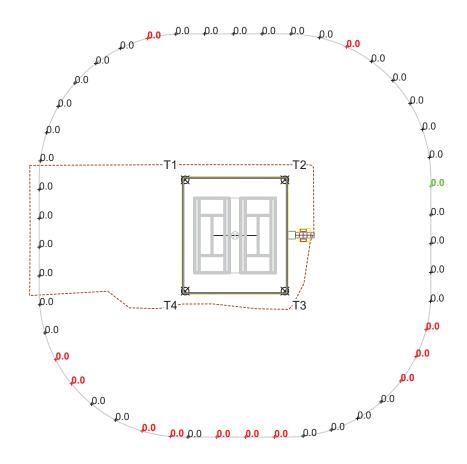
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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.



EQI	JIPMENT LI	ST FOR	AREAS SH	IOWN				
	Р	ole			Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLF	THIS GRID	OTHER GRIDS
4	T1-T4	40'	-	40'	TLC-LED-1150	2	2	0
4			TOTALS			8	8	0



SCALE IN FEET 1 : 100

Pole location(s) \bigoplus dimensions are relative to 0,0 reference point(s) \bigotimes

ENGINEERED DESIGN By: B.Taylor • File #186923A • 20-Jun-17

Emerald Park Tennis Courts

Dublin,OH

GRID SUMMARY	
Name:	Tennis-1 Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION S	UMMARY					
MAINTAINED HORIZONTAL FOOTCANDLES						
	Entire Grid					
Scan Average:	0.0001					
Maximum:	0.00					
Minimum:	0.00					
No. of Points:	47					
LUMINAIRE INFORMATIO	N					
Color / CRI: Luminaire Output: No. of Luminaires:	121,000 lumens					
Total Load:	9.2 kW					
		Lum	en Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs			
TLC-LED-1150	>51,000	>51,000	>51,000			
Reported per TM-21-11. See luminaire datasheet for details.						

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

dirt depreciation factor.

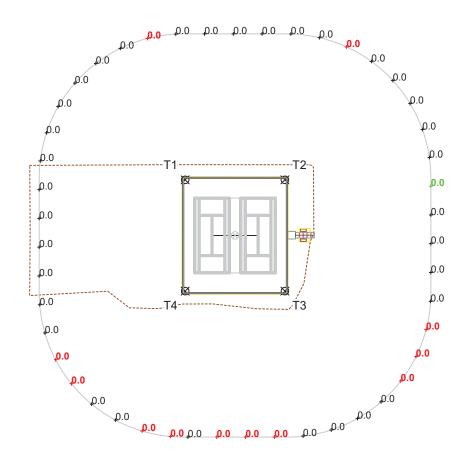
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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.



EQI	EQUIPMENT LIST FOR AREAS SHOWN									
	Pole Luminaires									
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS		
4	T1-T4	40'	-	TLC-LED-1150	2	2	0			
4	4 TOTALS					8	8	0		



SCALE IN FEET 1 : 100 0' 100' 200

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Emerald Park Tennis Courts

Dublin,OH

GRID SUMMARY	
Name:	Tennis-1 Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION S	UMMARY					
MAINTAINED MAX VERTICAL FOOTCANDLES						
Entire Grid						
Scan Average:	0.0006					
Maximum:	0.01					
Minimum:	0.00					
No. of Points:	47					
LUMINAIRE INFORMATIO	N					
Color / CRI: Luminaire Output: No. of Luminaires:	121,000 lumens					
Total Load:	9.2 kW					
	Lumen Maintenance					
Luminaire Type	L90 hrs	L80 hrs	L70 hrs			
TLC-LED-1150	>51,000	>51,000	>51,000			
Reported per TM-21-11. See luminaire datasheet for details.						

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

dirt depreciation factor.

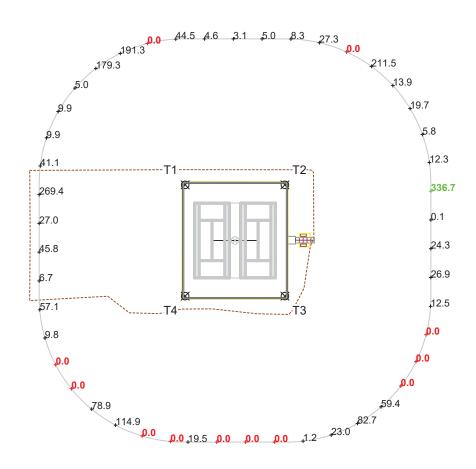
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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.



EQI	EQUIPMENT LIST FOR AREAS SHOWN									
	Pole Luminaires									
ОТУ	LOCATION	SIZE	GRADE	MOUNTING	LUMINAIRE	QTY /	THIS	OTHER		
QII	Q11 LOCATION 3	SILL	ELEVATION	HEIGHT	TYPE	POLE	GRID	GRIDS		
4	T1-T4	40'	-	40'	TLC-LED-1150	2	2	0		
4	4 TOTALS					8	8	0		



SCALE IN FEET 1 : 100 0' 100' 200'

ENGINEERED DESIGN By: B.Taylor • File #186923A • 20-Jun-17

Emerald Park Tennis Courts

Dublin,OH

GRID SUMMARY	
Name:	Tennis-1 Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION S	UMMARY					
MAINTAINED CANDELA (PER FIXTURE)						
Scan Average:	42.3106					
Maximum:	336.66					
Minimum:	0.00					
No. of Points:	: 47					
LUMINAIRE INFORMATIC	N					
Color / CRI: Luminaire Output: No. of Luminaires:	121,000 lumens					
Total Load:	9.2 kW					
		Lum	en Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs			
TLC-LED-1150	>51,000	>51,000	>51,000			
Reported per TM-21-11. See luminaire datasheet for details.						

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.



T1 52 T2 52 T2 Tennis-1 2 Court - 12' Spacing T4 52 T3

Emerald Park Tennis Courts

Dublin,OH

EQUIPMENT LAYOUT

INCLUDES:

· Tennis-1

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

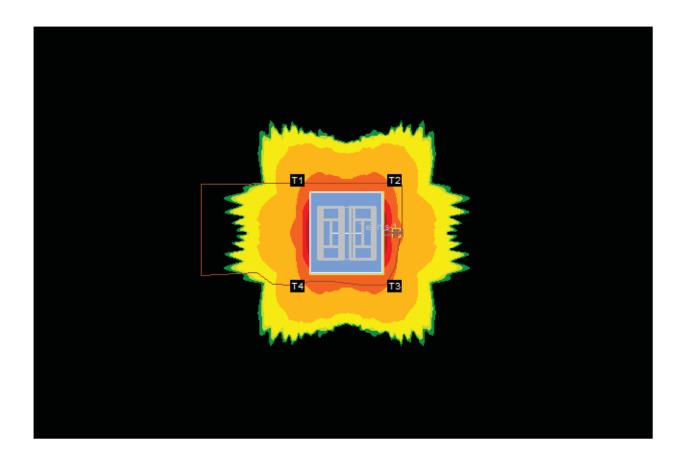
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQ	EQUIPMENT LIST FOR AREAS SHOWN								
	Pole Luminaires								
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE			
4	T1-T4	40'	-	40'	TLC-LED-1150	2			
4	TOTALS								

SINGLE LUMINAIRE AMPERAGE DRAW CHART									
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)								
Single Phase Voltage	208	220 (60)	240	277	347	380	480		
TLC-LED-1150	7.0	6.6	6.1	5.2	4.2	3.8	3.0		







Candelas: + 150,000 100,000 50,000 5,000 1,000 750 500

Emerald Park Tennis Courts

Dublin,OH

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

GLARE

Candela Levels

High Glare: 150,000 or more candela

Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela Equivalent to 100W incandescent light bulb.



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the written consent of Musco Sports Lighting, L.L.C.
L.S. and foreign patents issued and pending. M-2151-en04-1_0 91/97/80 Not to scale MOT RWS оинелелиом: Ground level Light-Structure System™ typical configuration TLC-LED-1150 Luminaires Electrical components enclosure Precast concrete base Galvanized steel pole Poletop luminaire assembly Wire harness (inside pole) 10 ft (3 m) 2 ft (0.6 m) 3 2 -0 PRELIMINARY CORPORATE OFFICE:
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+1-641-673-0411