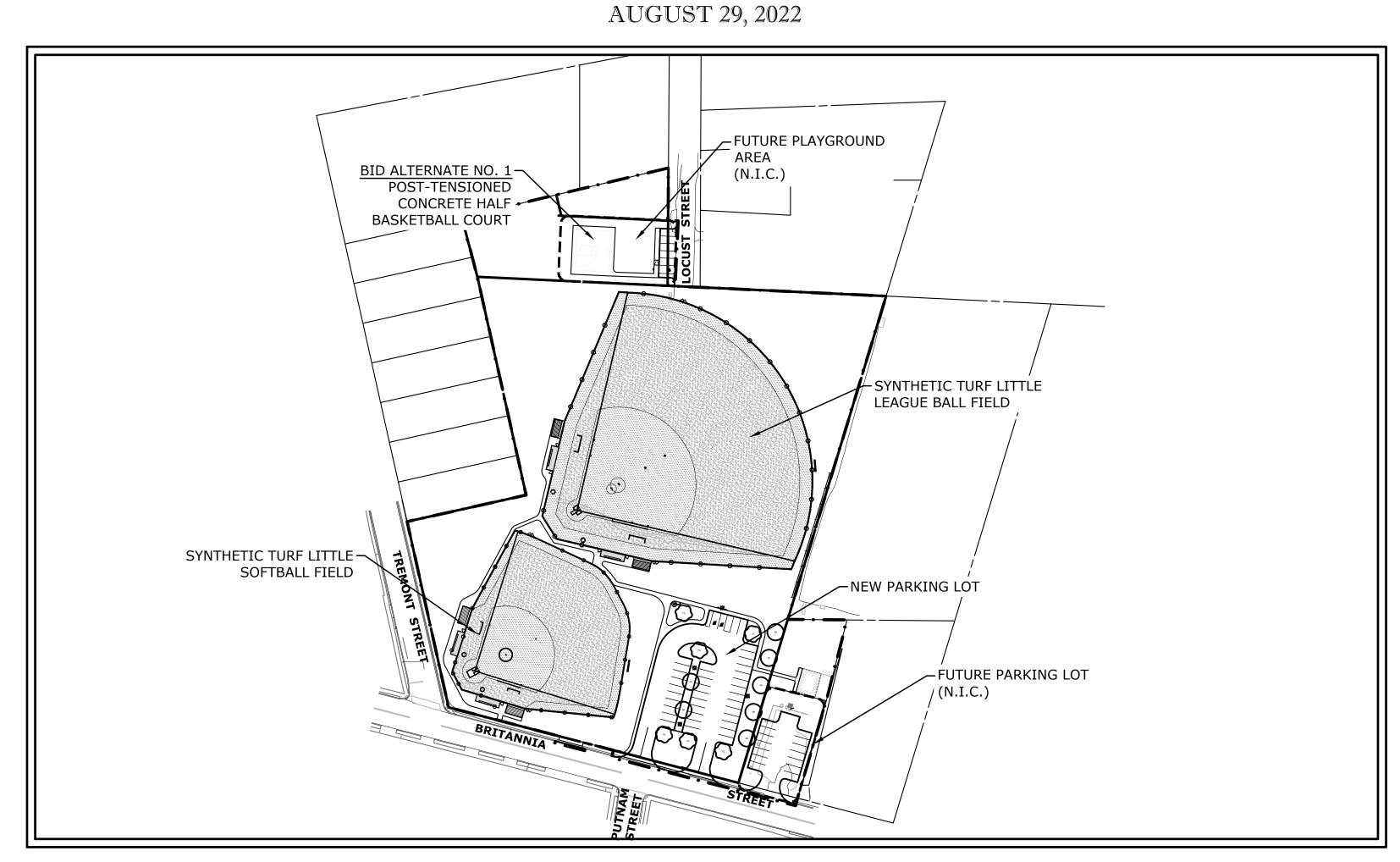
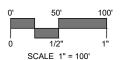
NORTH END FIELD BALLFIELD RECONSTRUCTION

210 BRITANNIA STREET MERIDEN, CONNECTICUT

BID DOCUMENTS



PROJECT SITE VICINITY MAP:



PREPARED BY:



SLRCONSULTING.COM

GENERAL NOTES

- 1. TOPOGRAPHIC INFORMATION IS BASED ON A SURVEY BY SLR CONSULTING INC., ENTITLED: "PROPERTY TOPOGRAPHIC, JACK BARRY FIELD BRITTANIA STREET MERIDEN, CONNECTICUT, DATED NOVEMBER 17, 2021, AT A SCALE 1"=40'."
- 2. NORTH BASED UPON THE CONNECTICUT COORDINATE SYSTEM NAD 1983 ESTABLISHED BY GPS.
- 3. VERTICAL DATUM BASED ON NAVD88 ESTABLISHED WITH GPS.
- 4. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
- 5. SLR CONSULTING INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
- 6. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 7. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
- 8. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE CITY OF MERIDEN REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION, FORM 818 AND ADDENDUMS
- 9. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER COMPANY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
- 10. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.

CONSTRUCTION SEQUENCE

- 1. PRIOR TO COMMENCEMENT OF WORK, A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH CITY STAFF AND REPRESENTATIVES OF THE CONTRACTOR AND OWNER. AT THIS MEETING, ONE PERSON WILL BE PLACED IN CHARGE OF SEDIMENT AND EROSION CONTROL FOR THE ENTIRE
- 2. GENERAL CONTRACTOR TO SUBMIT A DETAILED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL BY THE TOWN AND PROJECT ENGINEER.
- 3. CITY STAFF WILL BE NOTIFIED ONCE A CONSTRUCTION SCHEDULE IS FINALIZED AND PRIOR TO THE START OF ANY SITE WORK.
- 4. CONTACT "CALL BEFORE YOU DIG" FOR MARK OUT OF ALL UTILITIES.
- 5. CONTRACTOR TO STAKE OUT LIMIT OF DISTURBANCE. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN.
- 6. CONTRACTOR TO INSTALL SEDIMENT AND EROSION CONTROLS ALONG THE PERIMETEE AND STABILIZED CONSTRUCTION ENTRANCES.
- 7. STRIP TOPSOIL. PLACE SEDIMENT FILTER FENCE AND HAYBALES AROUND STOCKPILES.
- 8. INITIATE MASS EARTHWORK OPERATIONS AFTER ALL BASINS, BERMS, SILT FENCE & HAYBALES ARE INSTALLED.
- 9. INSTALL SITE UTILITIES AND FOUNDATIONS.
- 10. SLOPES ARE TO BE ESTABLISHED AS SOON AS PRACTICAL. STABILIZE ALL SLOPES IMMEDIATELY AFTER THEIR ESTABLISHMENT.
- 11. INSTALL SITE IMPROVEMENTS INCLUDING FENCING, NETTING, ETC.
- 12. SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER.
- 13. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AND THE TOWN'S DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS
- 14. INSPECTION OF THE SITE FOR EROSION SHALL CONTINUE FOR A PERIOD OF THREE MONTHS AFTER COMPLETION WHEN RAINFALLS OF ONE INCH OR MORE OCCUR.
- 15. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
- 16. A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.





LOCATION MAP

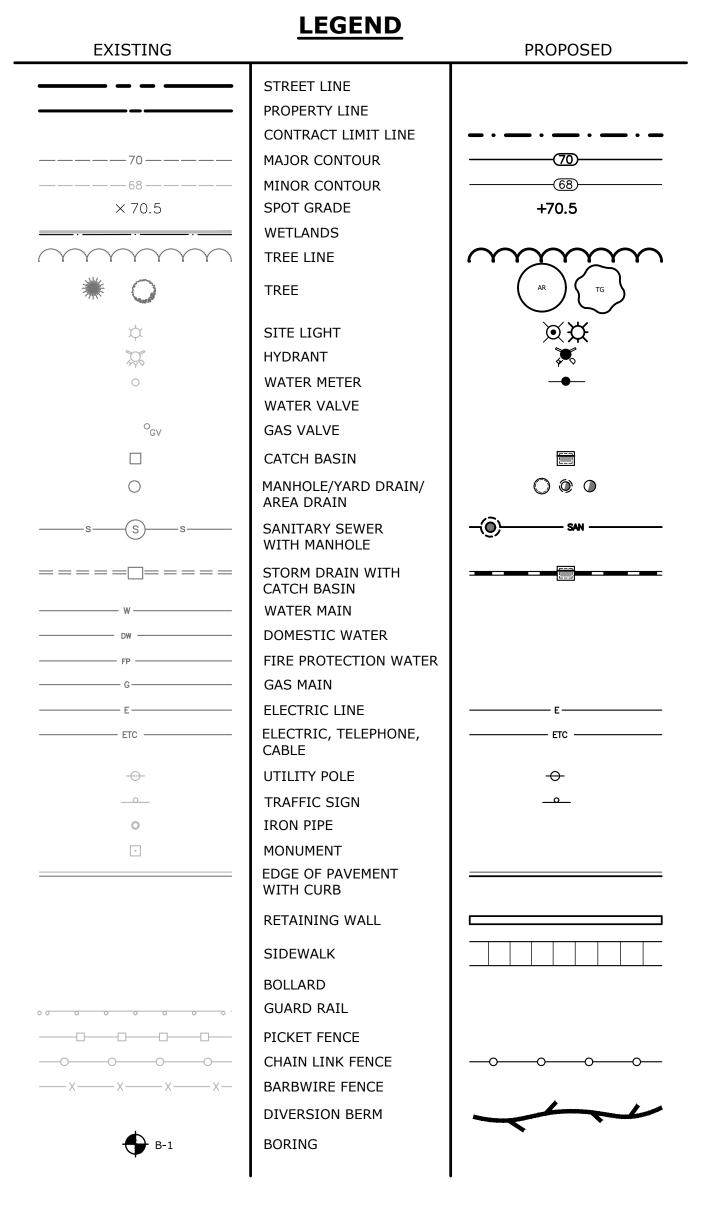
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PREPARED FOR:

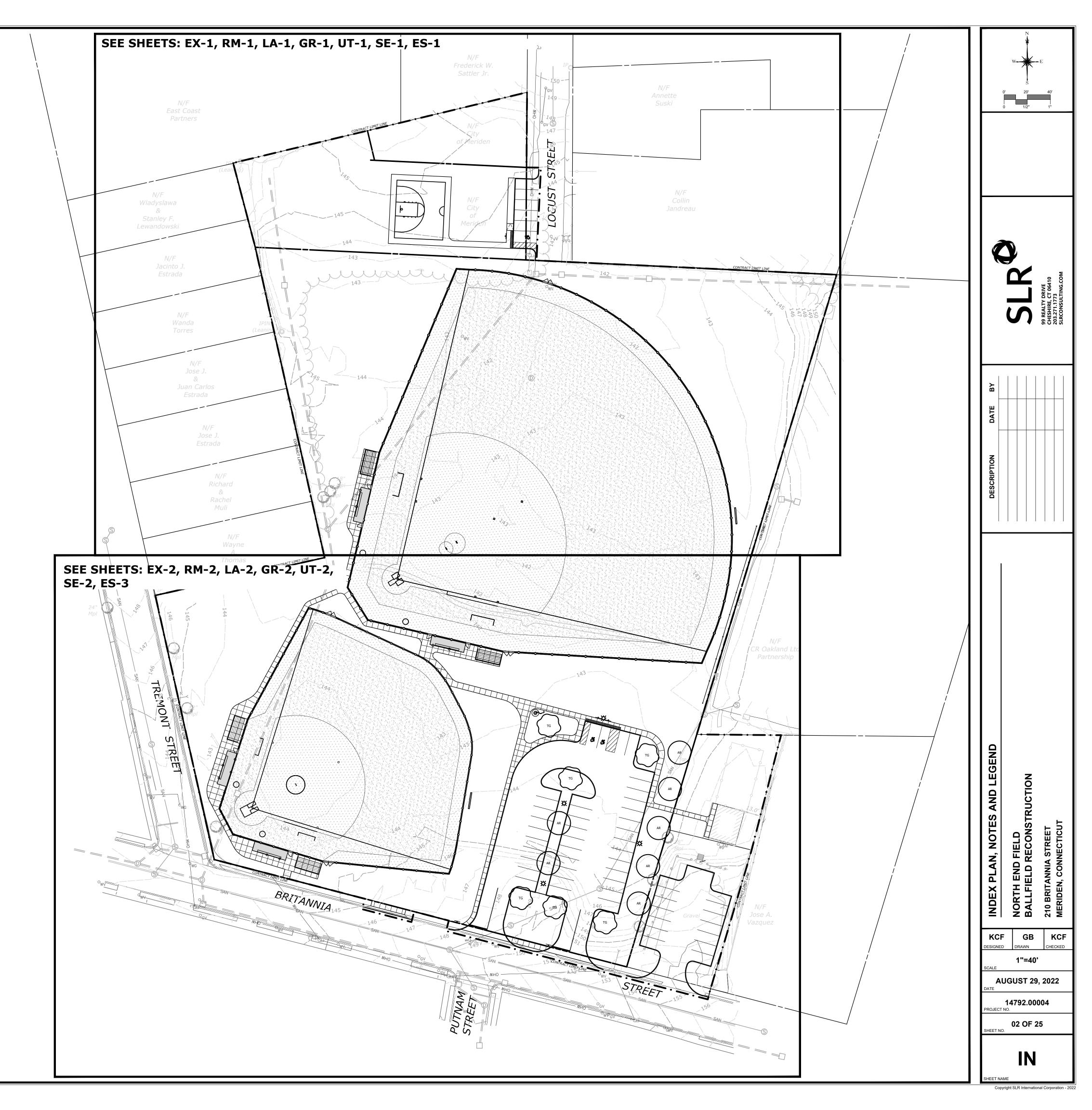
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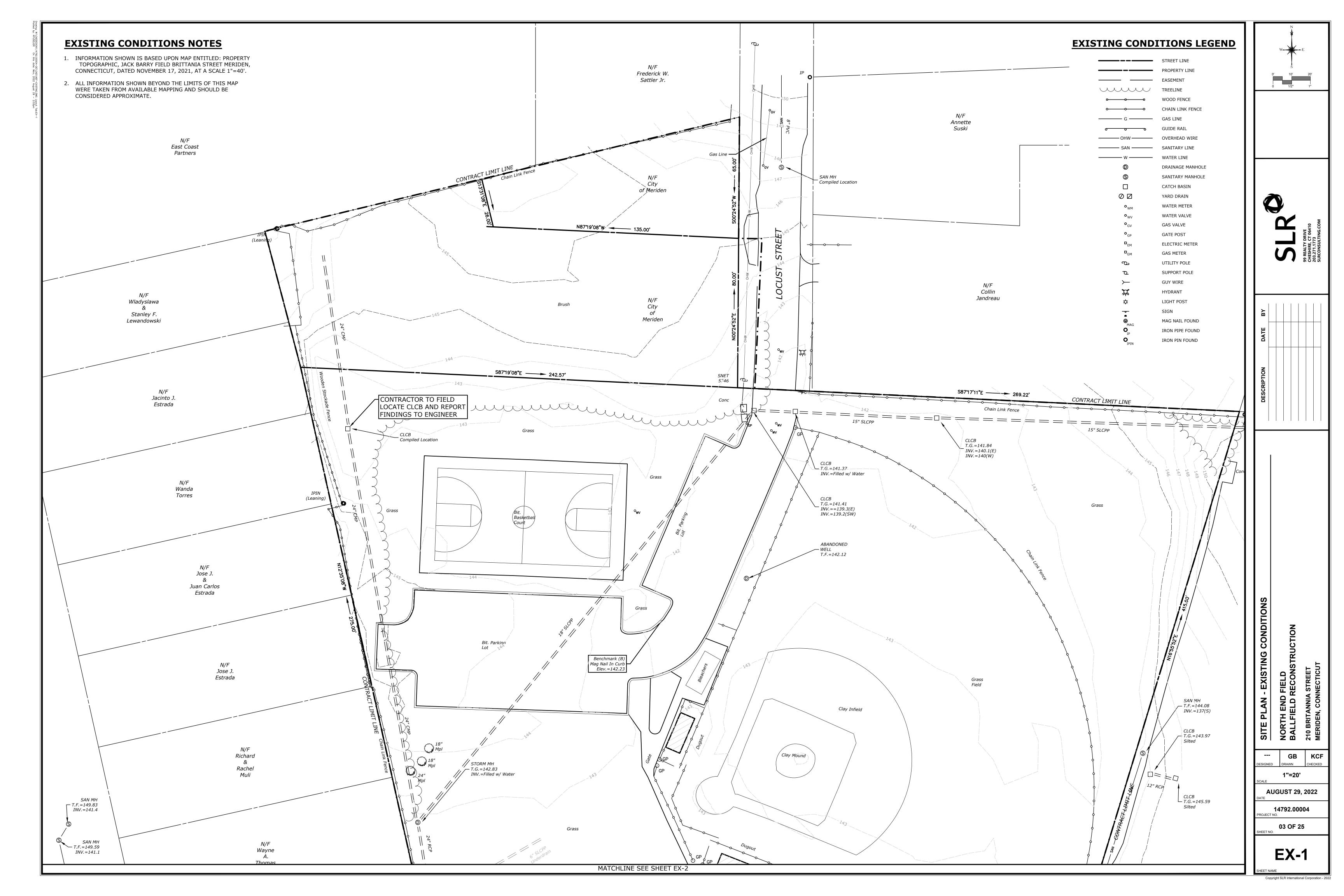
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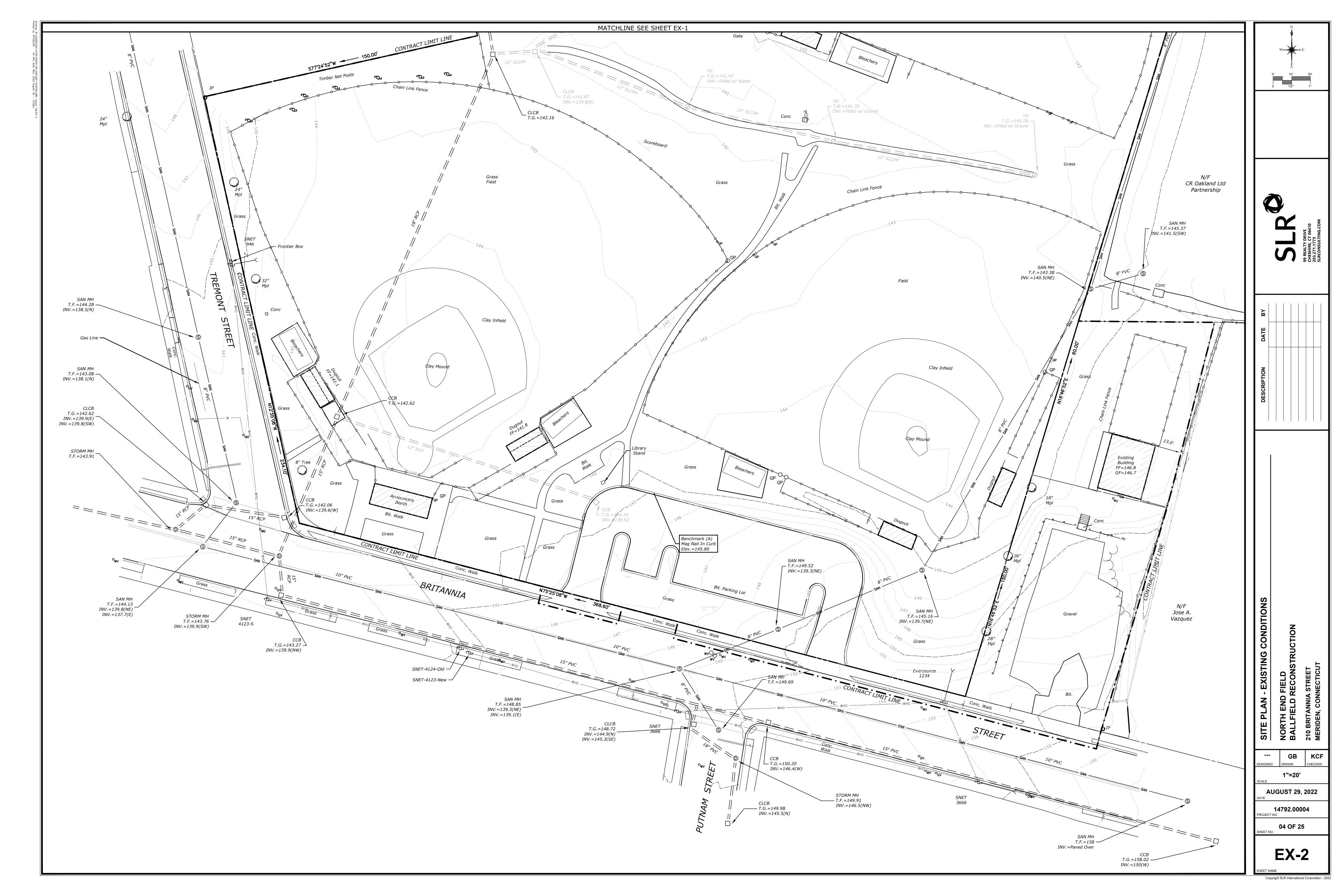
NO.	NAME	TITLE
01		TITLE SHEET
02	IN	INDEX PLAN
03-04	EX-1-EX-2	EXISTING CONDITIONS
05-06	RM-1-RM-2	SITE PLAN - REMOVALS
07-08	LA-1-LA-2	SITE PLAN - LAYOUT & LANDSCAPING
09-10	GR-1-GR-2	SITE PLAN - GRADING
11-12	UT-1-UT-2	SITE PLAN - UTILITIES
13-14	SE-1-SE-2	SITE PLAN - SEDIMENT & EROSION CONTROLS
15	SE-3	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
16-20	SD-1-SD-5	SITE DETAILS
22	SD-6	CITY OF MERIDEN STANDARD DETAILS
22	ES-0	SITE ELECTRICAL SPECIFICATIONS, NOTES & ABBREVIATIONS
23	ES-1	SITE ELECTRICAL DETAILS & SCHEDULES
24	ES-2	SITE ELECTRICAL DETAILS
25	ES-3	SITE ELECTRICAL PLAN

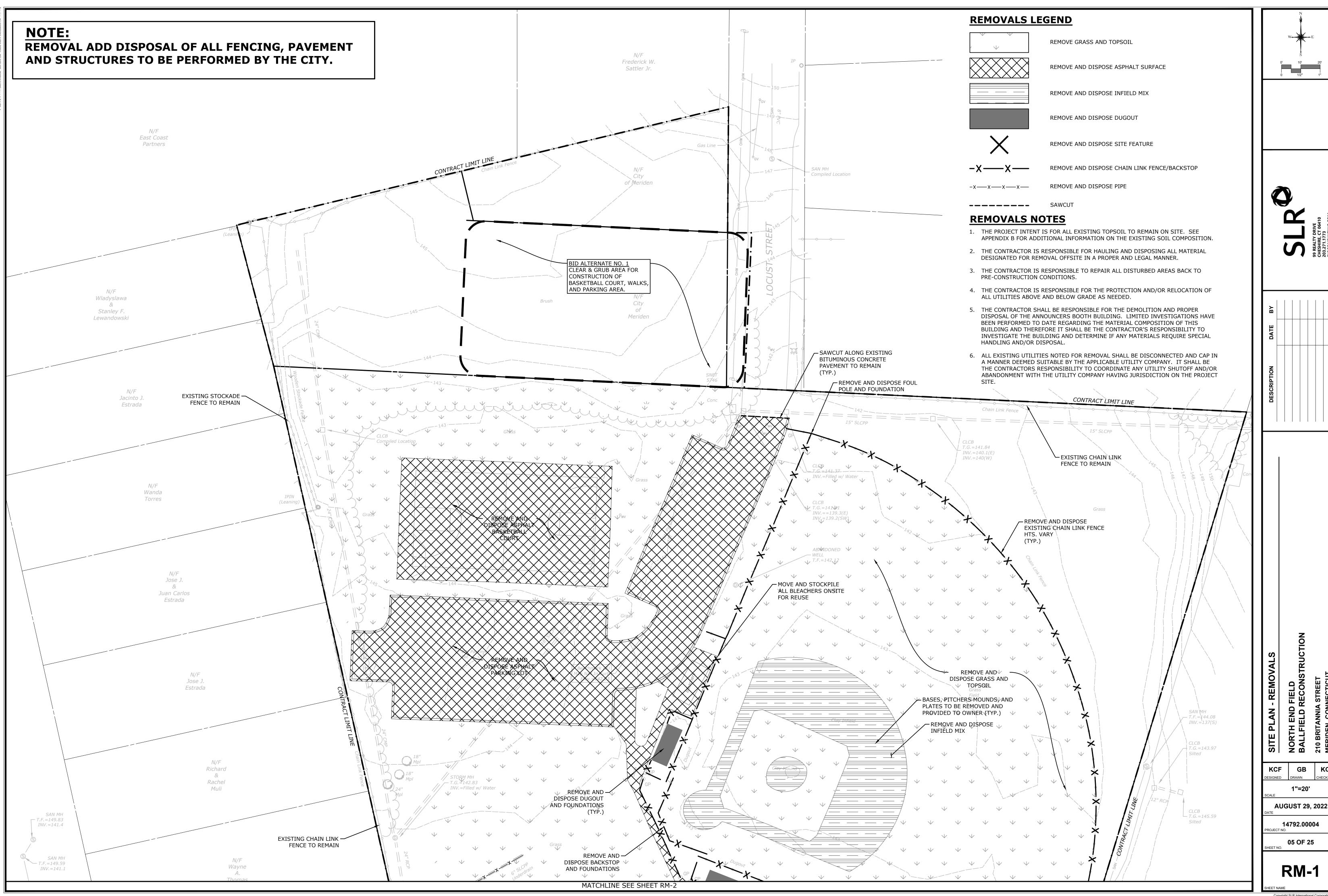


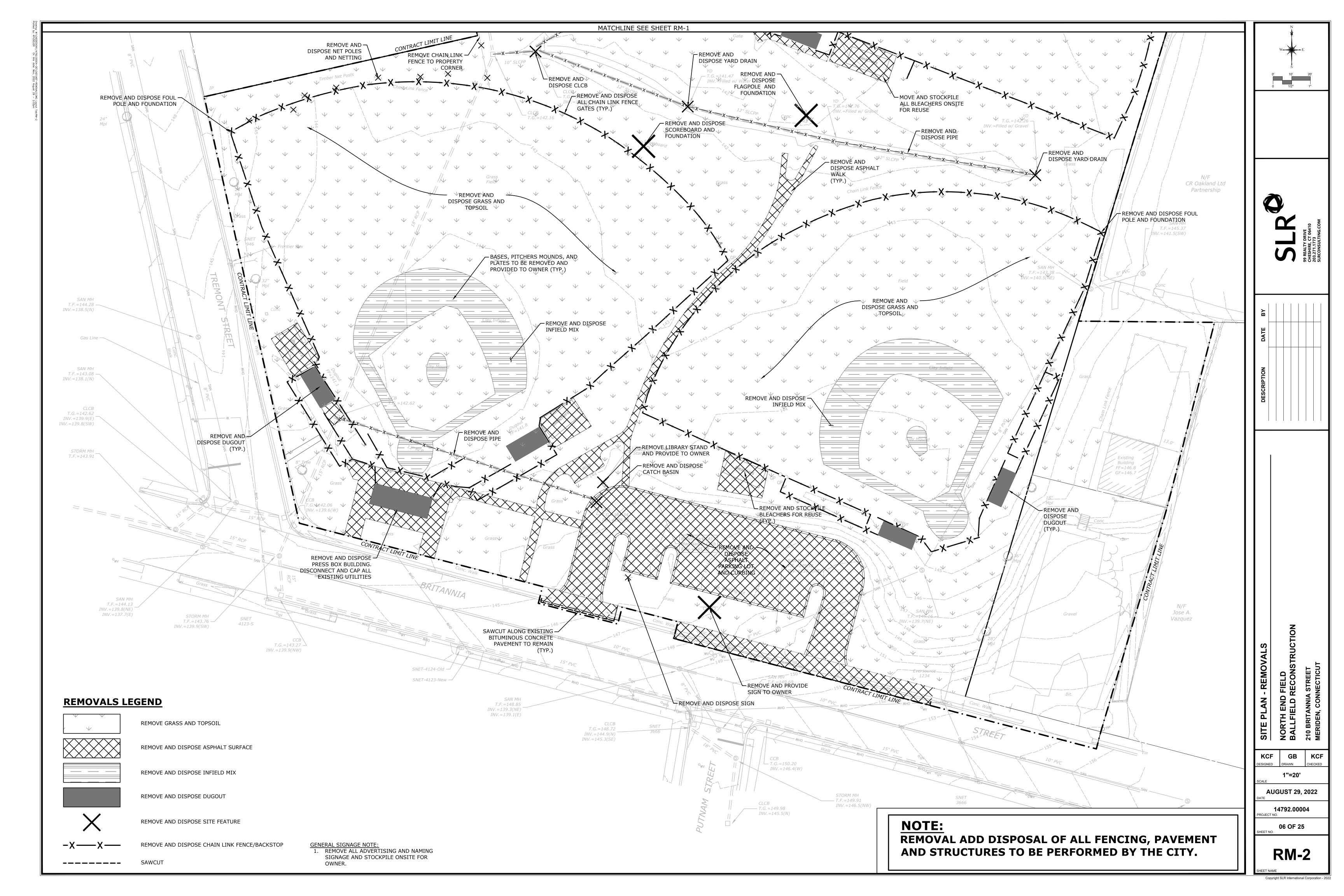
N.I.C. = NOT IN CONTRACT

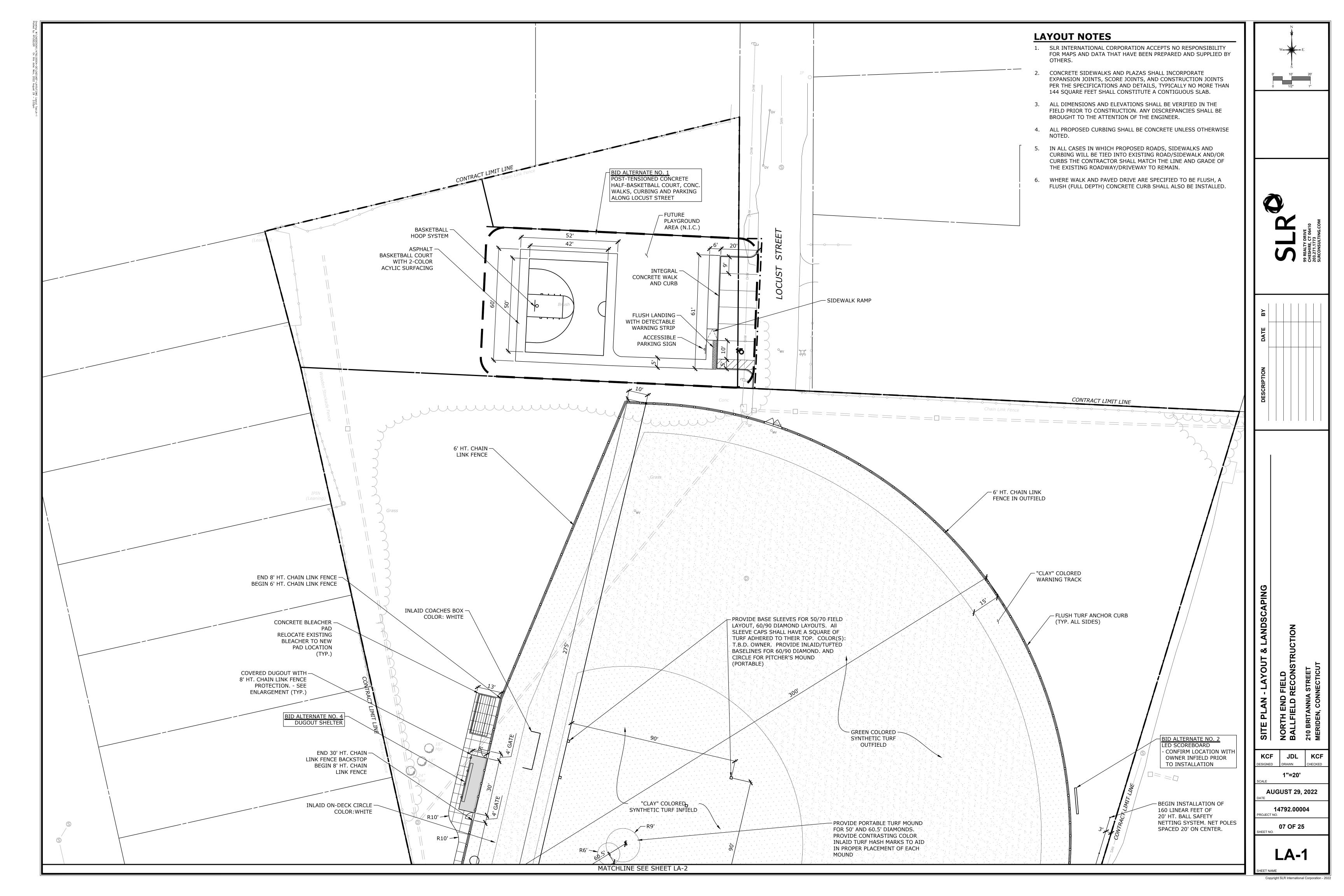


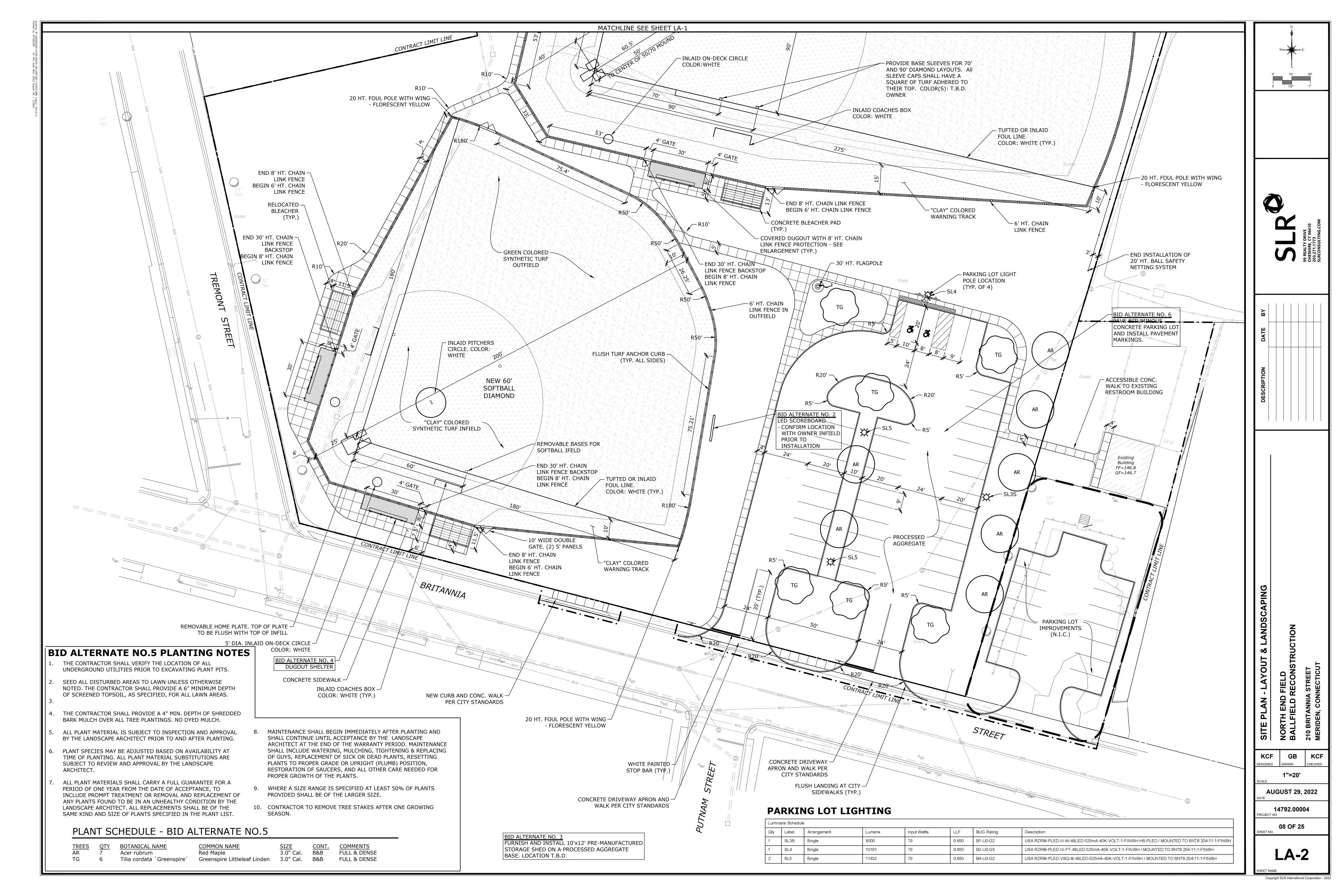


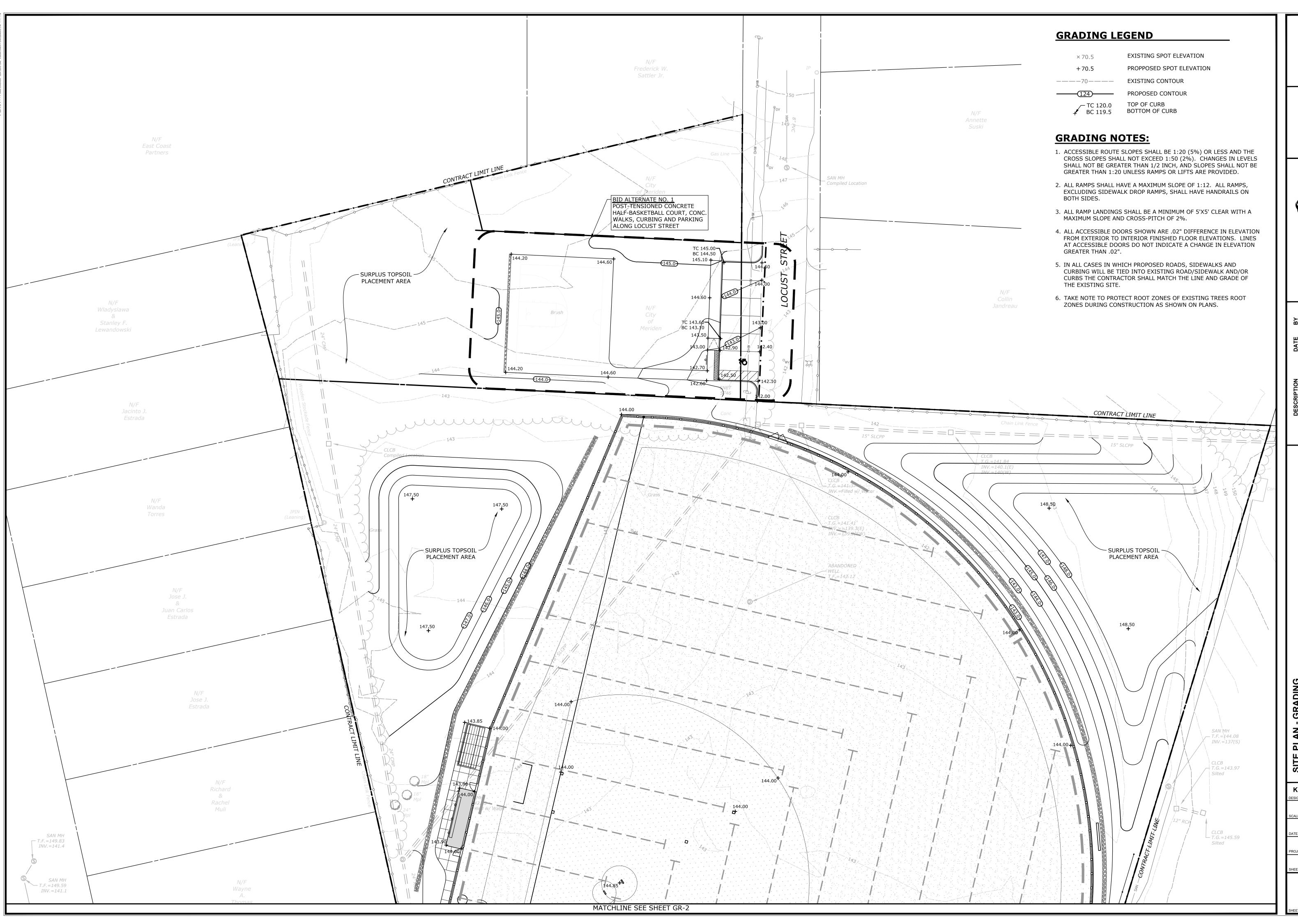


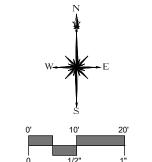




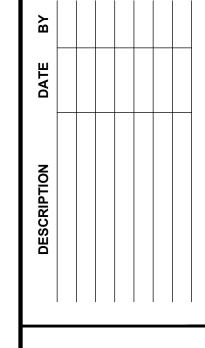












NORTH END FIELD
BALLFIELD RECONSTRUCTION
210 BRITANNIA STREET

MCF JHH KCF
CHECKED

1"=20'
ALE

AUGUST 29, 2022
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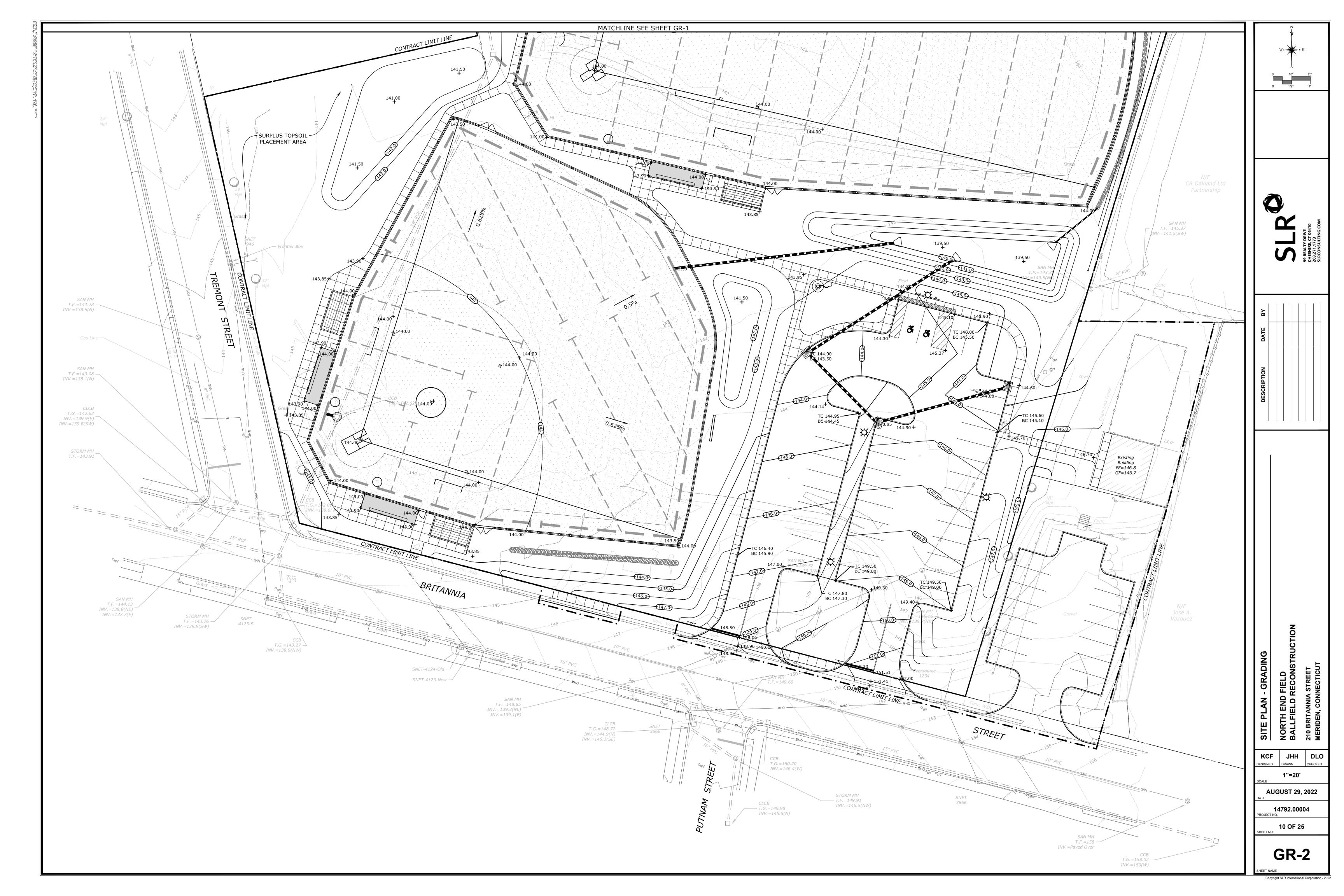
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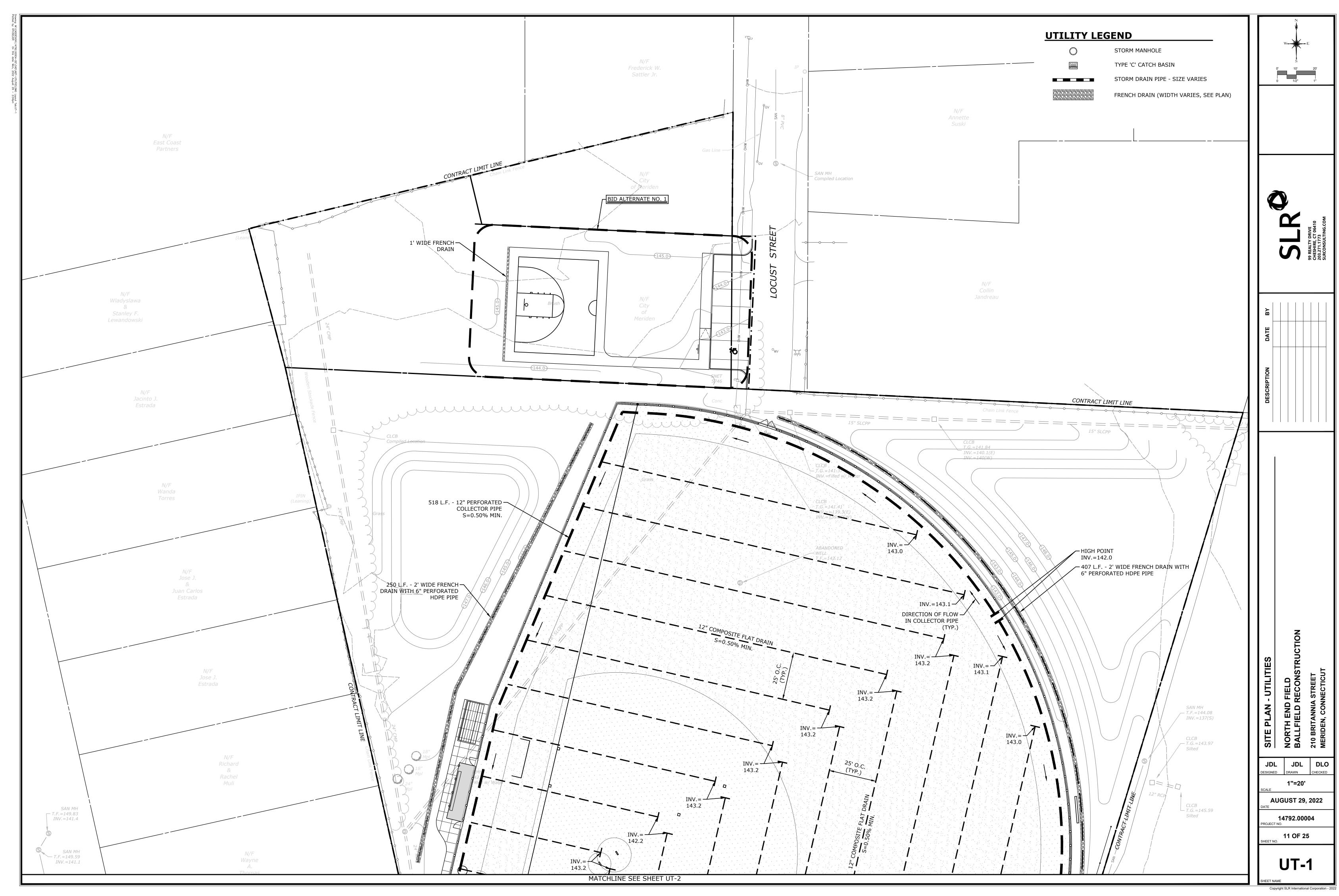
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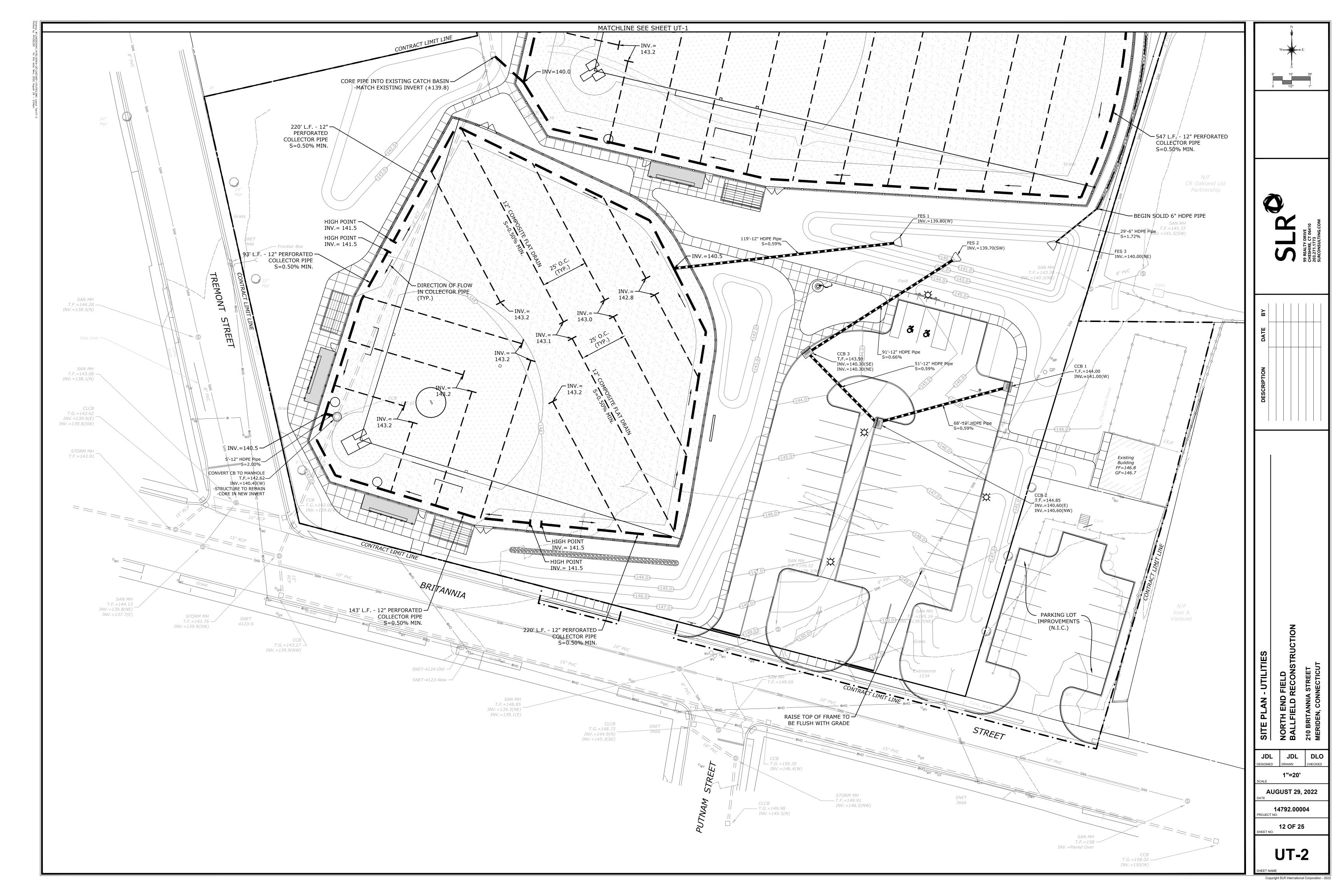
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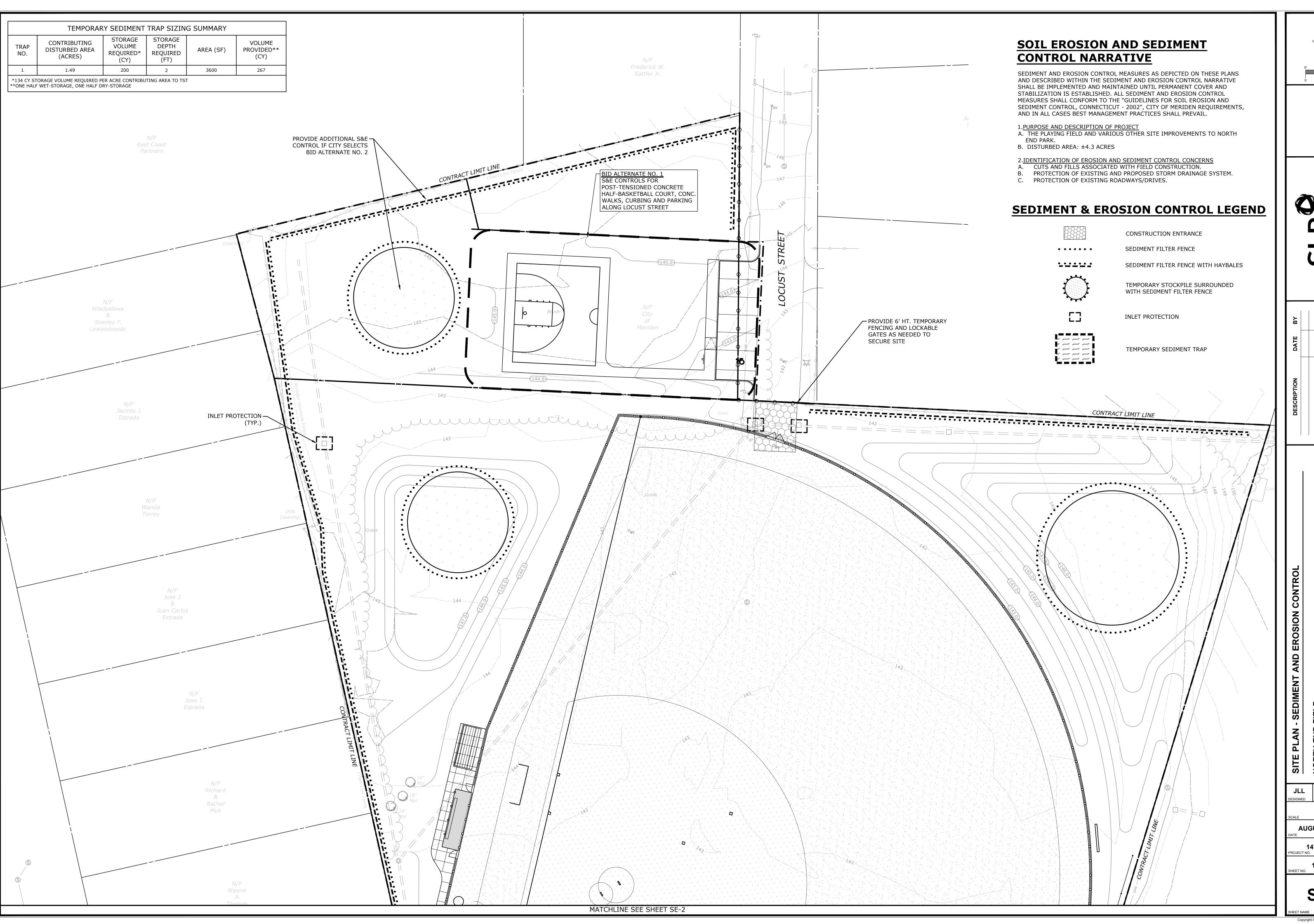
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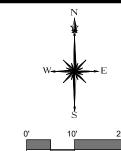
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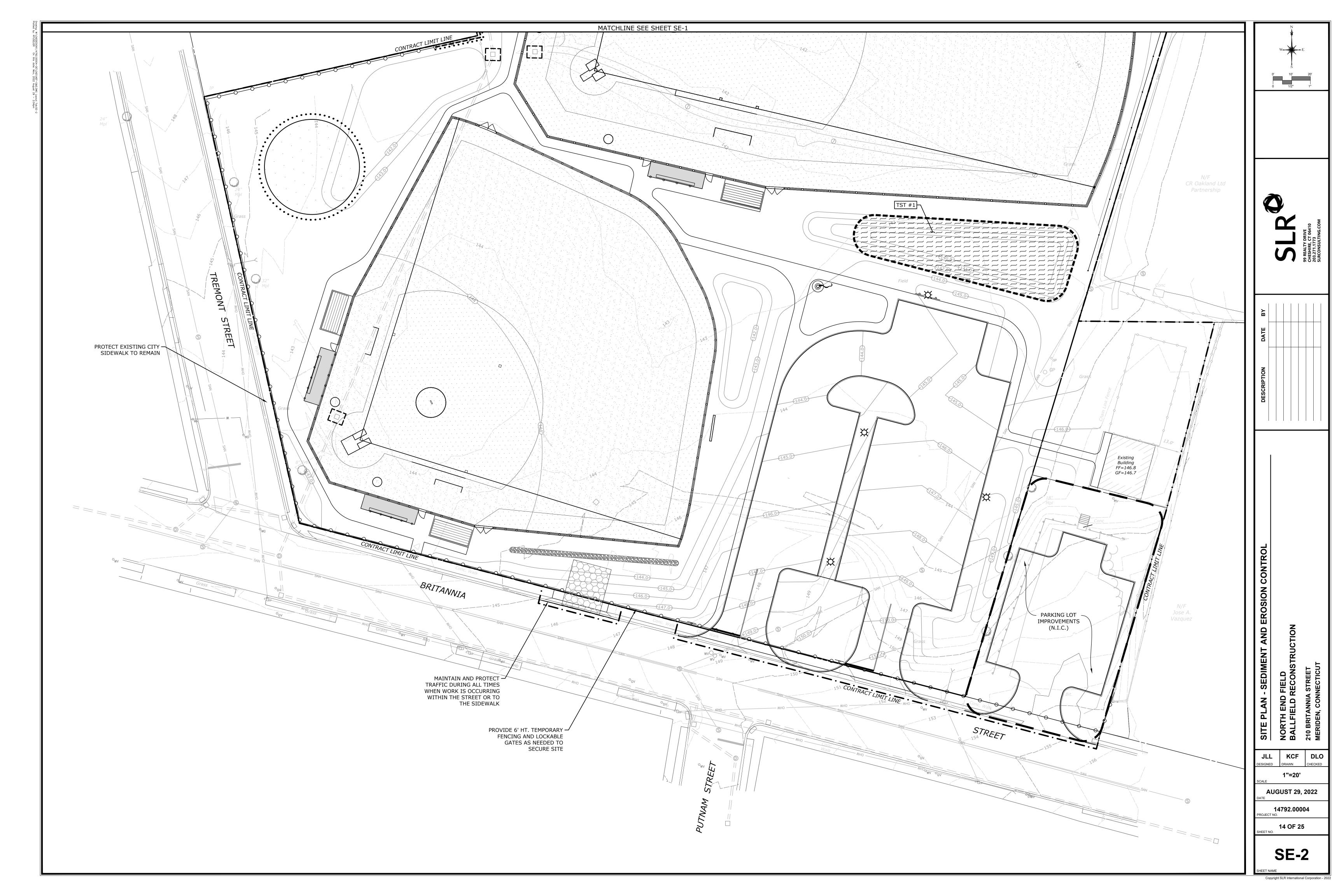


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SE-1



THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INSOFAR AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATER BODIES, AND TO PREVENT, INSOFAR AS POSSIBLE, EROSION ON THE SITE.

LAND GRADING

GENERAL:

- 1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
- a. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL
- TO ONE VERTICAL (2:1).
 b. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO
- HORIZONTAL TO ONE VERTICAL (2:1).
 c. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO
- FOUR VERTICAL (1:4).
 d. PROVISION SHOULD BE MADE TO CONDUCT SURFACE WATER SAFELY TO STORM DRAINS
- TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES

 e. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM EROSION, SLIDING,
- SETTLING, OR CRACKING.

 f. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS, WATERCOURSES, OR WATER BODIES.
- g. PRIOR TO ANY RE-GRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING

GENERAL

- 1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
- 2. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
- REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
 APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.

MATERIAL:

- 1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
- TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
- 3. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES (OVER 1" IN DIAMETER), LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
- 4. AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
- SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS SUITABLE. AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
 THE pH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE pH TO AN

ACCEPTABLE LEVEL

AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.

SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST SIX INCHES (6"), OR TO THE DEPTH SHOWN ON THE LANDSCAPING PLANS.

TEMPORARY VEGETATIVE COVER

GENERAL:

1. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

SITE PREPARATION:

- 1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- 2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- 3. APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF ONE (1) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SO. FT.).
- DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQ. FT.).

 4. APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQ. FT.) AND SECOND APPLICATION OF 200 LBS. OF 10-10-10-(5 LBS. PER 1,000 SQ. FT.) WHEN GRASS IS FOUR INCHES (4") TO SIX INCHES (6") HIGH. APPLY ONLY WHEN GRASS IS DRY.
- 5. UNLESS HYDROSEEDED, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.
- 6. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

ESTABLISHMENT:

- SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
- APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- 3. UNLESS HYDROSEEDED, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4 INCH OF SOIL USING SUITABLE EQUIPMENT.
- 4. MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW.) APPLY STRAW OR HAY MULCH AND ANCHOR TO SLOPES GREATER THAN 3% OR WHERE CONCENTRATED FLOW WILL OCCUR.

GENERAL:

1. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

- 2. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- 3. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
 APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
- 6. APPLY FERTILIZER ACCORDING TO SOIL TEST OR:

SPREAD SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 300 LBS. OF 10-10-10 FERTILIZER PER ACRE (7 LBS. PER 1,000 SQ. FT.); THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 300 LBS. OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED.

FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 LBS. PER 1,000 SQ. FT.).

VEGETATIVE COVER SELECTION & MULCHING

TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 3 LBS./1,000 SQ.FT. (IOLUIUM PERENNE)

PERMANENT VEGETATIVE COVER:

GENERAL SEEDING:

- 10% AMERICAN KENTUCKY BLUEGRASS 10% VICTORY II CHEWINGS FESCUE
- 20% *JASPER II CREEPING RED FESCUE 20% SPARTAN HARD FESCUE
- 20% SPARTAN HARD FESCUE 30% *CUTTER PERENNIAL RYE GRASS

*HIGH ENDOPHYTE

SEEDING RATE - 220 POUNDS PER 43,560 SF

TEMPORARY MULCHING:

STRAY OR HAY 70-90 LBS./1,000 SQ.FT. (TEMPORARY VEGETATIVE AREAS)

WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

ESTABLISHMENT:

- 1. SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
- 2. SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC. BELOW).
- SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC. BELOW).

 3. APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
- 5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY

 MULCHING SPECIFICATIONS (SEE VEGETATIVE COVER SELECTION & MULCHING
- MULCHING SPECIFICATIONS. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
- 6. USE PROPER INOCULANT ON ALL LEGUME SEEDINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.7. USE SOD WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS

WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

MAINTENANCE:

- 1. TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.
- 2. ON SITES WHERE GRASSES PREDOMINATE, BROADCAST ANNUALLY 500 POUNDS OF 10-10-10 FERTILIZER PER ACRE (12 LBS. PER 1,000 SQ. FT.) OR AS NEEDED ACCORDING TO ANNUAL SOIL TESTS.
- 3. ON SITES WHERE LEGUMES PREDOMINATE, BROADCAST EVERY THREE (3) YEARS OR AS INDICATED BY SOIL TEST 300 POUNDS OF 0-20-20 OR EQUIVALENT PER ACRE (8 LBS PER 1,000 SQ. FT.).

EROSION CHECKS

GENERAL:

 TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

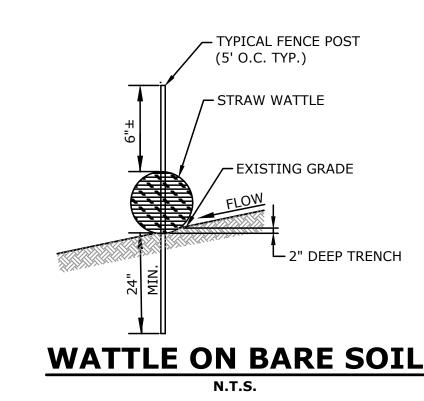
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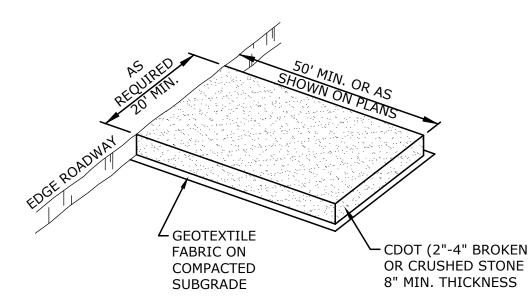
- BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
 BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OF REINFORCEMENT.
- 3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- 4. GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

INSTALLATION AND MAINTENANCE:

- BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
 BALED HAY EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
- 3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.

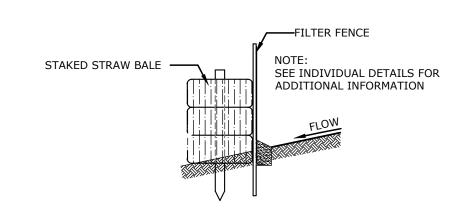
 A INSPECTION SHALL BE EDECLIENT (AT MINIMUM MONTHLY AND RECORD AND AFTER HEAVY
- 4. INSPECTION SHALL BE FREQUENT (AT MINIMUM MONTHLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- 5. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.



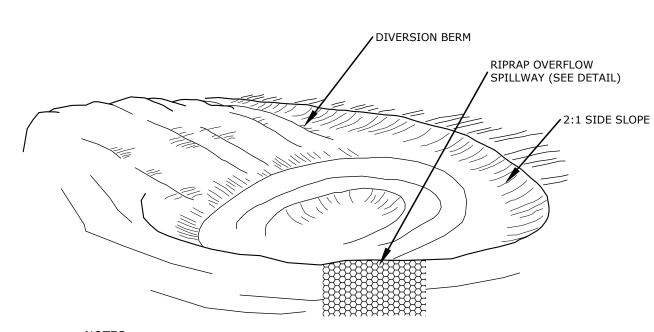


NOTE:
CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED
AND MAINTAINED DURING OPERATIONS WHICH
PROMOTE VEHICULAR TRACKING OF MUD

CONSTRUCTION ENTRANCE PAD



SEDIMENT FILTER FENCE WITH STAKED HAYBALES N.T.S.

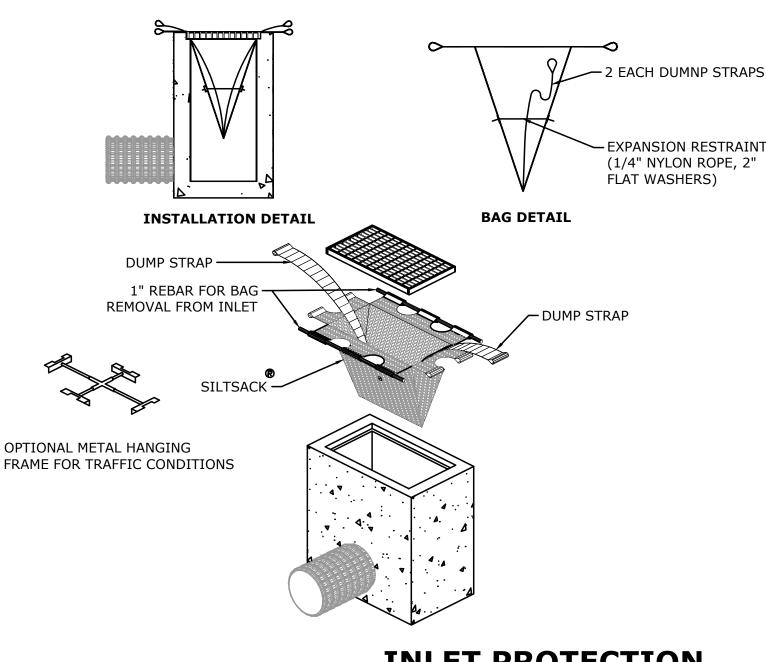


NOTES:
REFER TO SEDIMENT & EROSION CONTROL PLAN FOR APPROXIMATE DIMENSIONS AND REQUIRED VOLUME.

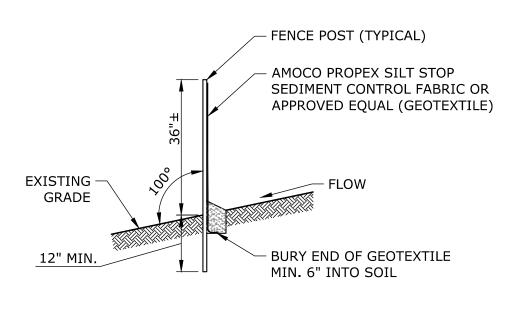
SOURCE: 2002 CT. GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL

TEMPORARY SEDIMENT TRAP

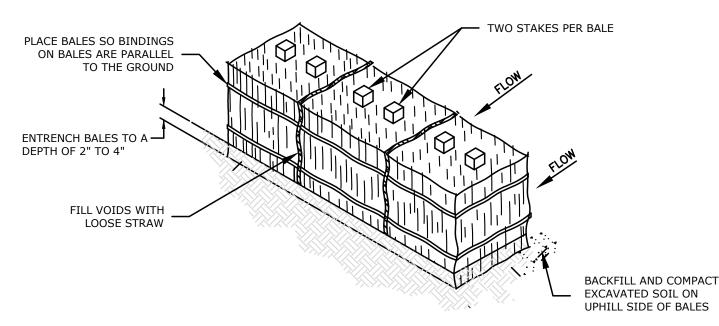
NOT TO SCALE



INLET PROTECTION

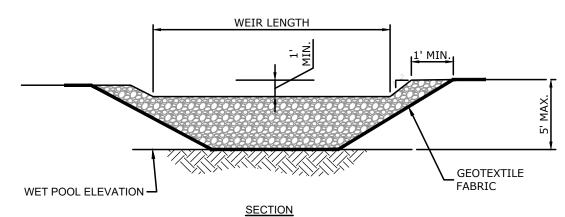


SEDIMENT FILTER FENCE NOT TO SCALE



- 1. IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
- 2. BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
- 3. WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
- 4. UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, HAY BALES WILL BE RELOCATED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.

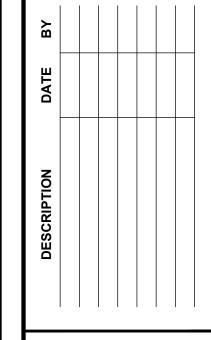
STAKED HAYBALES



SOURCE: 2002 CT. GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL

SEDIMENT TRAP RIPRAP OVERFLOW
SPILLWAY

SEALTY DRIVE CHESHIRE, CT 06410 203.271.1773 SLRCONSULTING.COM



LD

SITE DETAILS

NORTH END FIELD

NORTH END FIELD

N.T.S.

STATE

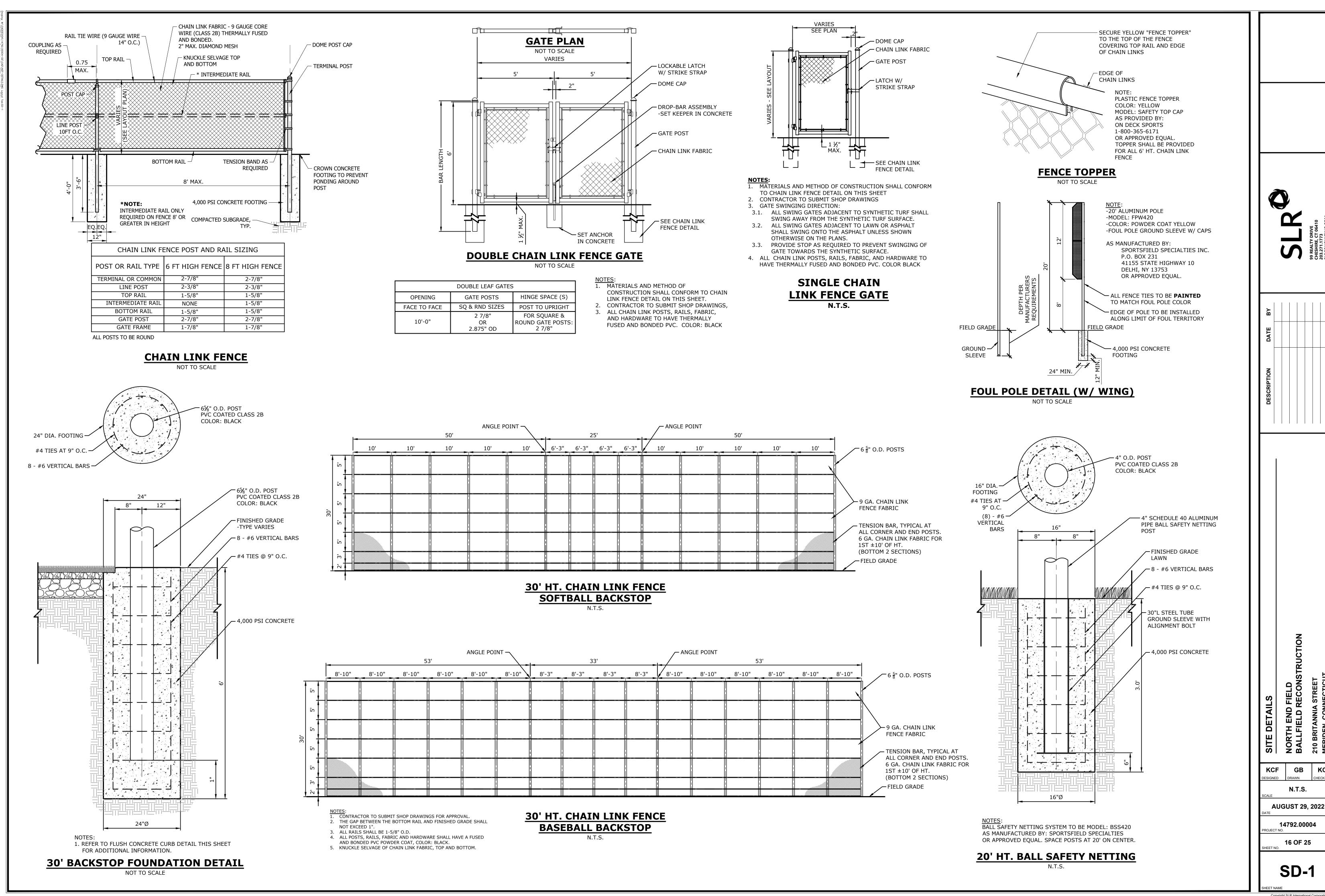
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SE-3

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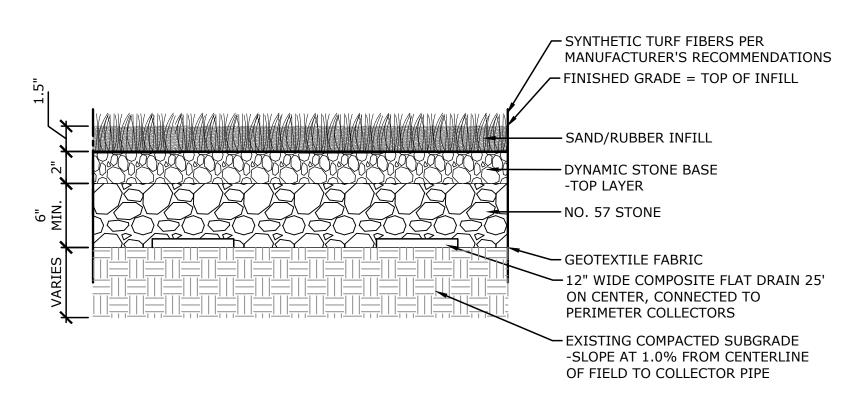
SD-1

NORTH END FIELD BALLFIELD RECONS

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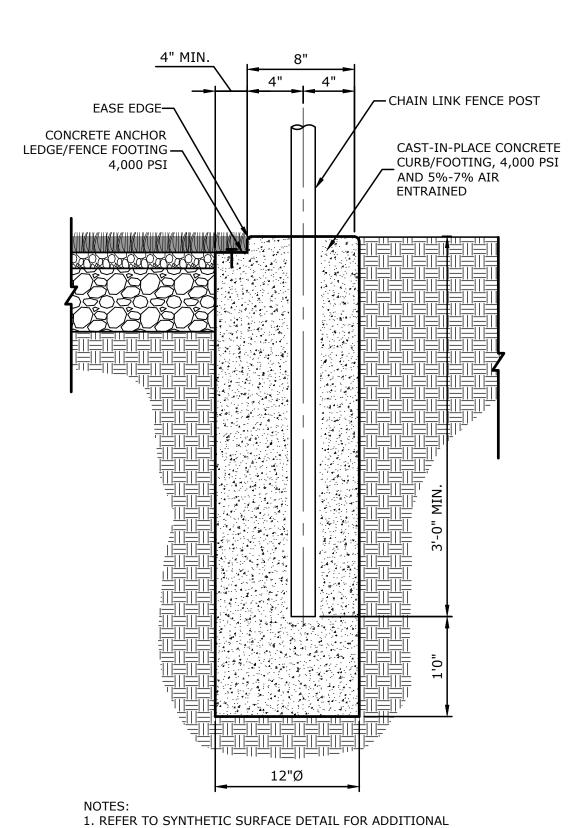
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SYNTHETIC INFILL TURF

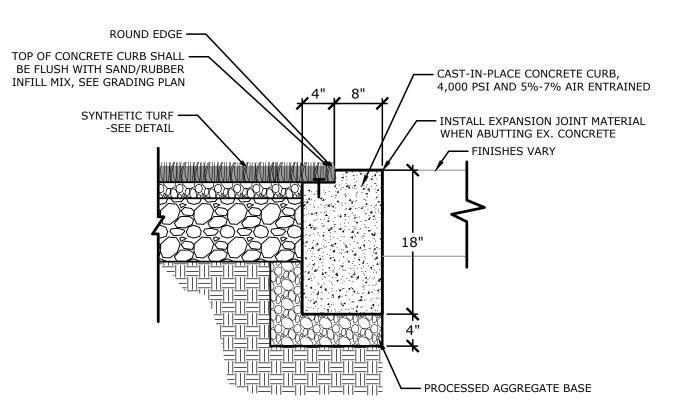
NOT TO SCALE



- INFORMATION ON BASE MATERIAL. 2. PROVIDE EXPANSION JOINTS IN CURB @ 20' MAXIMUM.
 - 3. CONTRACTOR SHALL COORDINATE ANCHORING OF TURF WITH SUPPLIER FOR TURF ATTACHMENT REQUIREMENTS AT CURB.

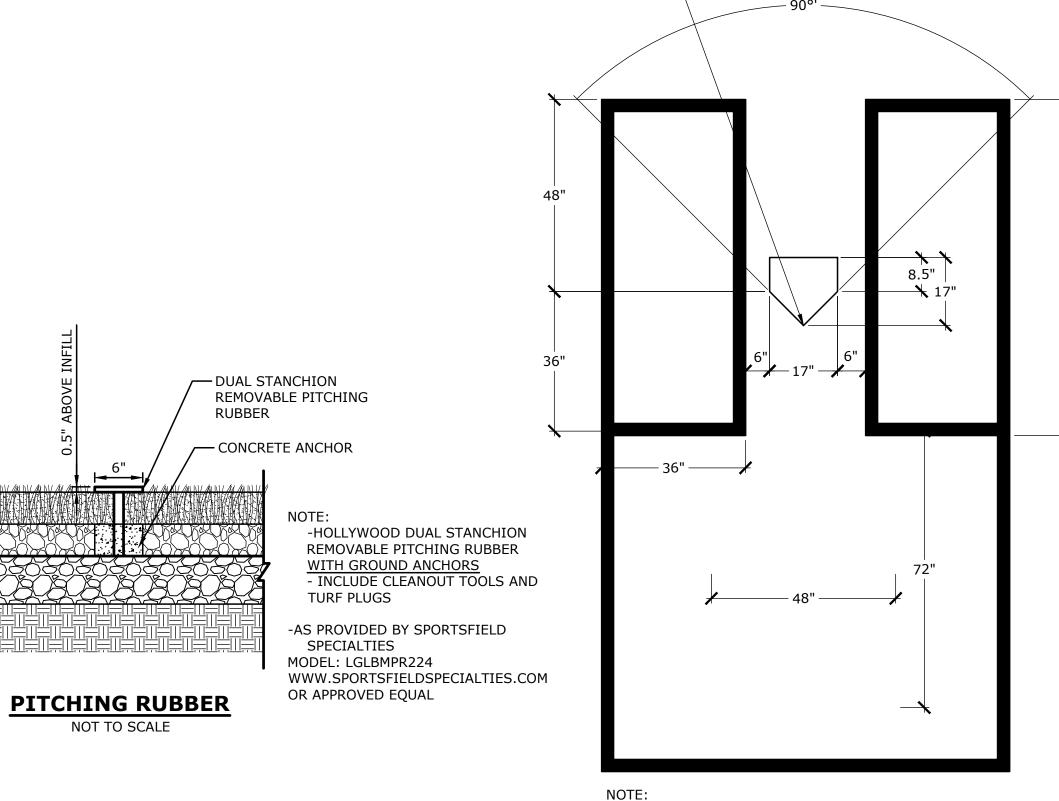
FLUSH CONCRETE TURF ANCHOR CURB AT FENCE POST

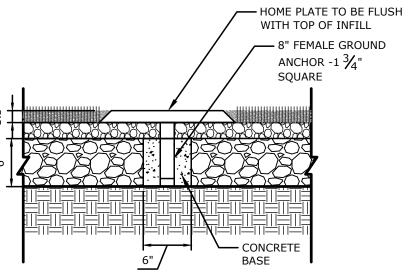
NOT TO SCALE



- NOTES:
 1. REFER TO SYNTHETIC SURFACE DETAIL FOR ADDITIONAL
- INFORMATION ON BASE MATERIAL. 2. PROVIDE EXPANSION JOINTS IN CURB @ 20' MAXIMUM.
- 3. CONTRACTOR SHALL COORDINATE ANCHORING OF TURF WITH SUPPLIER FOR TURF ATTACHMENT REQUIREMENTS AT CURB.

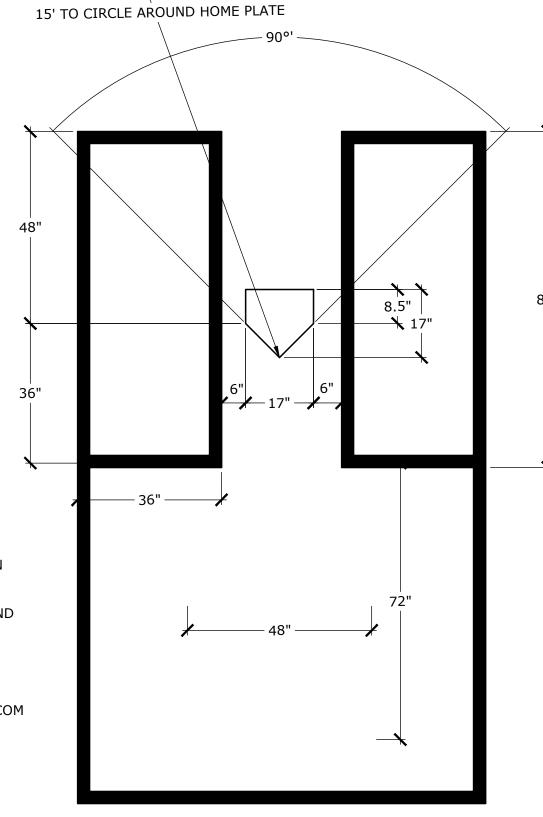
FLUSH CONCRETE TURF ANCHOR CURB





NOTE:
-INFILL TO BE REMOVED AS REQUIRED TO HAVE HOME
PLATE SIT FLUSH WITH SURROUNDING INFILL AREAS

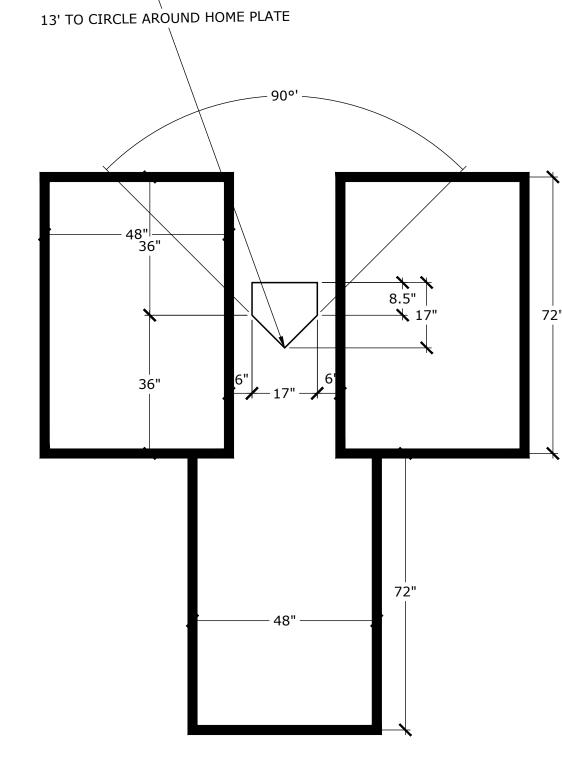
HOME PLATE MOUNTING DETAIL



NOTE: ALL LINES ARE TO BE INLAID WITH 4" WHITE TURF AND ARE TO MEET NFHS REGULATIONS FOR FIELD DIMENSIONS.

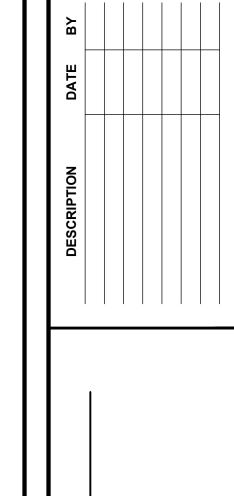
LAYOUT @ HOME PLATE DETAIL - SOFTBALL

NOT TO SCALE



NOTE: ALL LINES ARE TO BE INLAID WITH 4" WHITE TURF AND ARE TO MEET LITTLE LEAGUE REGULATIONS FOR FIELD DIMENSIONS.

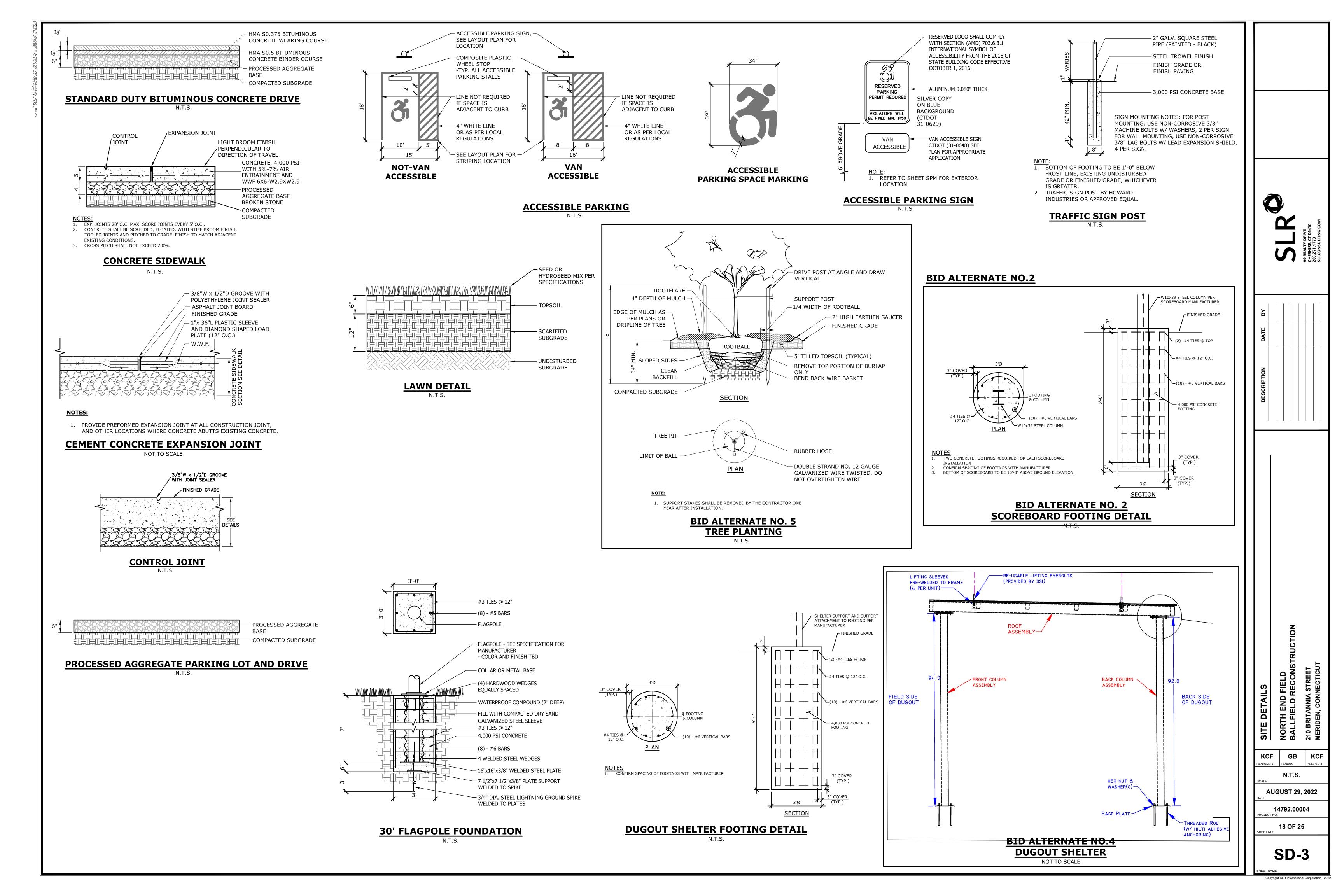
LAYOUT @ HOME PLATE DETAIL - BASEBALL NOT TO SCALE

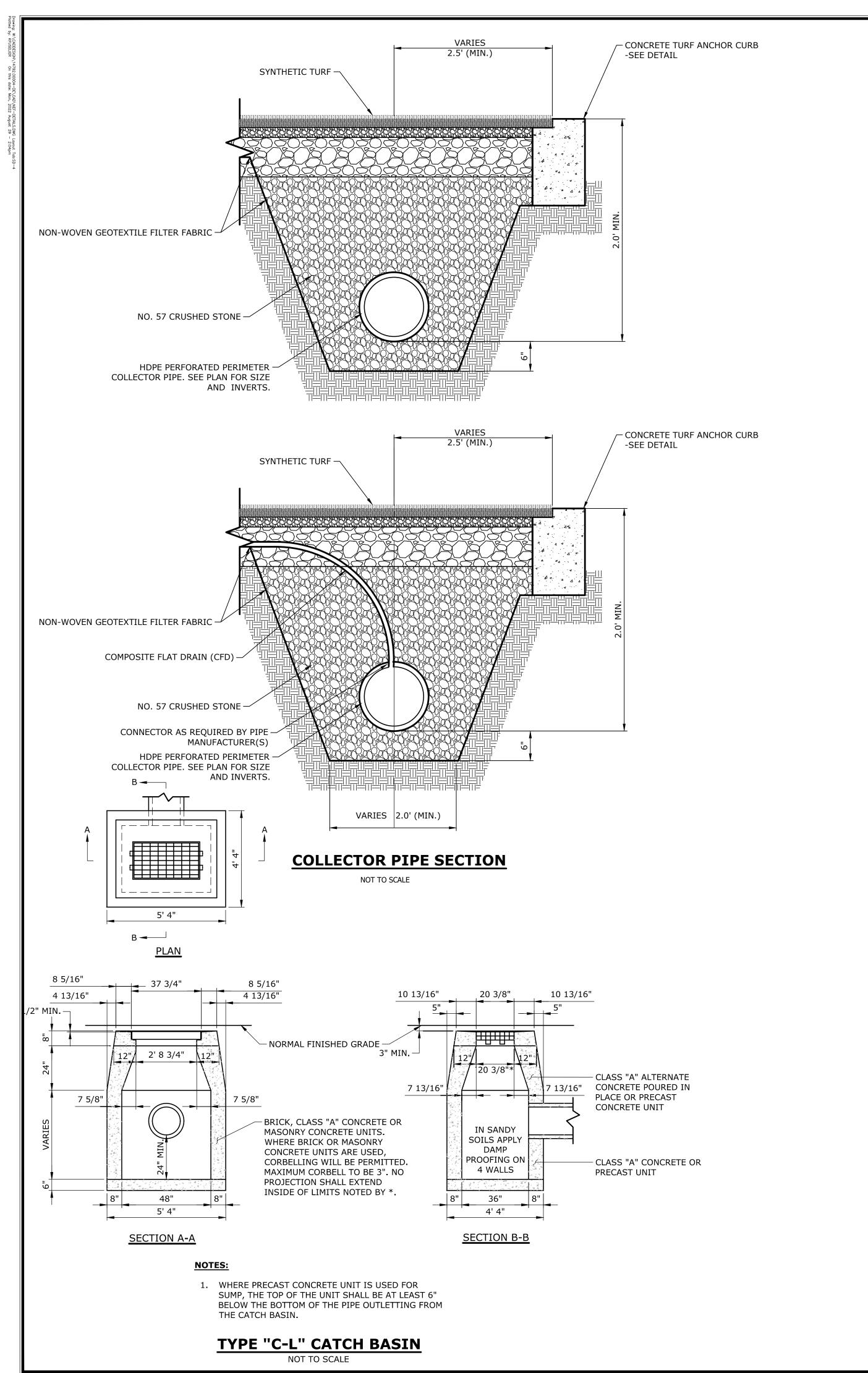


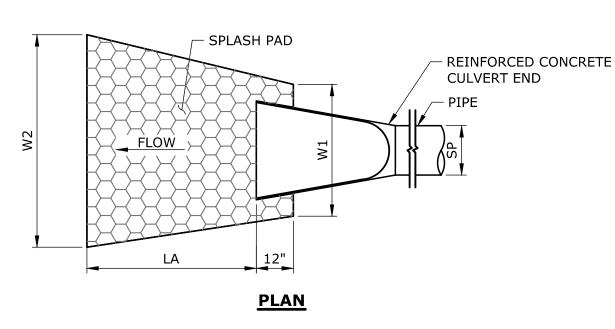
NORTH END FIELD BALLFIELD RECONSTRUCTION

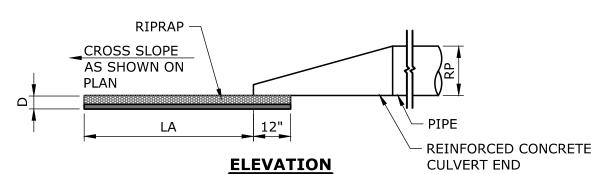
GB **AUGUST 29, 2022**

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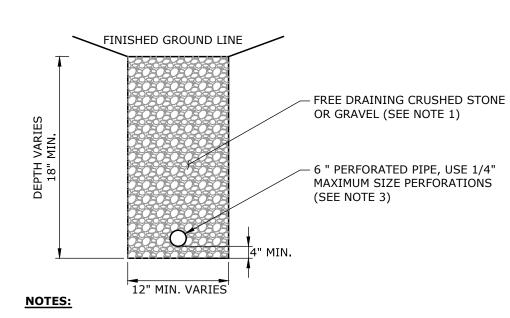






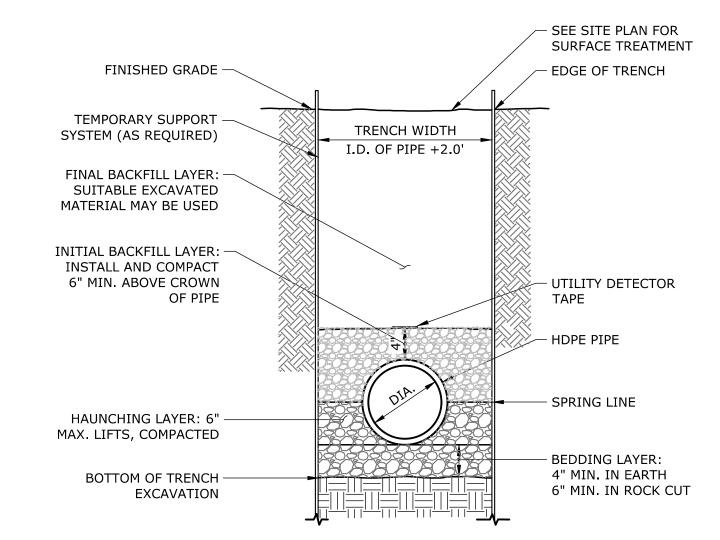
OUTLET PROTECTION ID	TYPE	SP (FT)	RP (FT)	LA (FT)	W1 (FT)	W2 (FT)	D (IN)
FES ANALYSIS POINT C	TYPE B INTER- MEDIATE	1.25	1.25	10.0	4.0	7.0	12

FLARED END WITH RIP RAP SPLASH PAD NOT TO SCALE



- 1. SEE NARRATIVE FOR GRADATION REQUIREMENTS, ENVELOPE AND FILTER
- 2. IF SURFACE WATER IS TO BE INTERCEPTED, EXTEND CRUSHED STONE OR GRAVEL TO THE GROUND SURFACE.
- 3. CONDUIT MAY BE HEAVY DUTY PERFORATED HIGH DENSITY POLYETHYLENE OR DRILLED P.V.C. SPR 35

FRENCH DRAIN

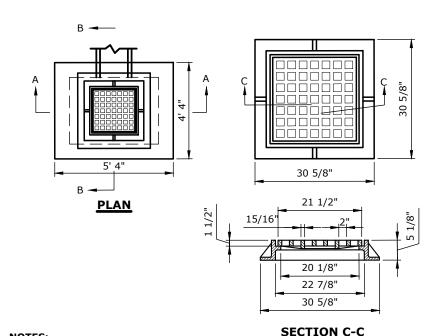


NOTES:

- BACKFILL MATERIAL USED IN BEDDING, HAUNCHING, AND INITIAL BACKFILL LAYERS SHALL BE 3/4" CRUSHED STONE.
- STALE DE 374 CROSTIED STONE,
- 2. PAYMENT LIMIT FOR ROCK IN TRENCH TO BE PIPE DIAMETER + 2.0'

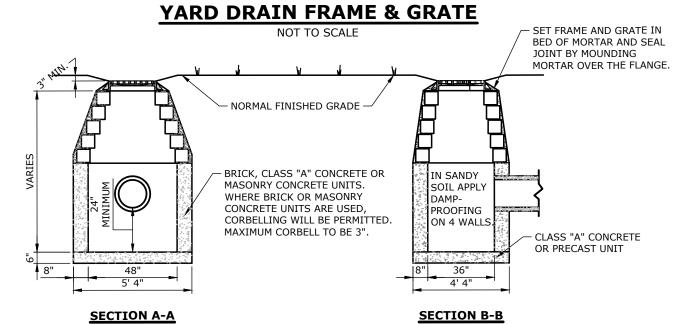
STORM DRAINAGE TRENCH

NOT TO SCALE



1. YARD DRAIN FRAMES & GRATES SHALL BE PATTERN #R-3404 AS MANUFACTURED BY THE

"NEENAH FOUNDRY COMPANY" OF NEENAH, WISCONSIN, OR APPROVED EQUAL.



NOTES:

1. WHERE PRECAST CONCRETE UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN.

YARD DRAIN

NOT TO SCALE





SITE DETAILS

SITE DETAILS

NORTH END FIELD

NORTH END FIELD

NORTH END FIELD

NORTH END FIELD

STORY

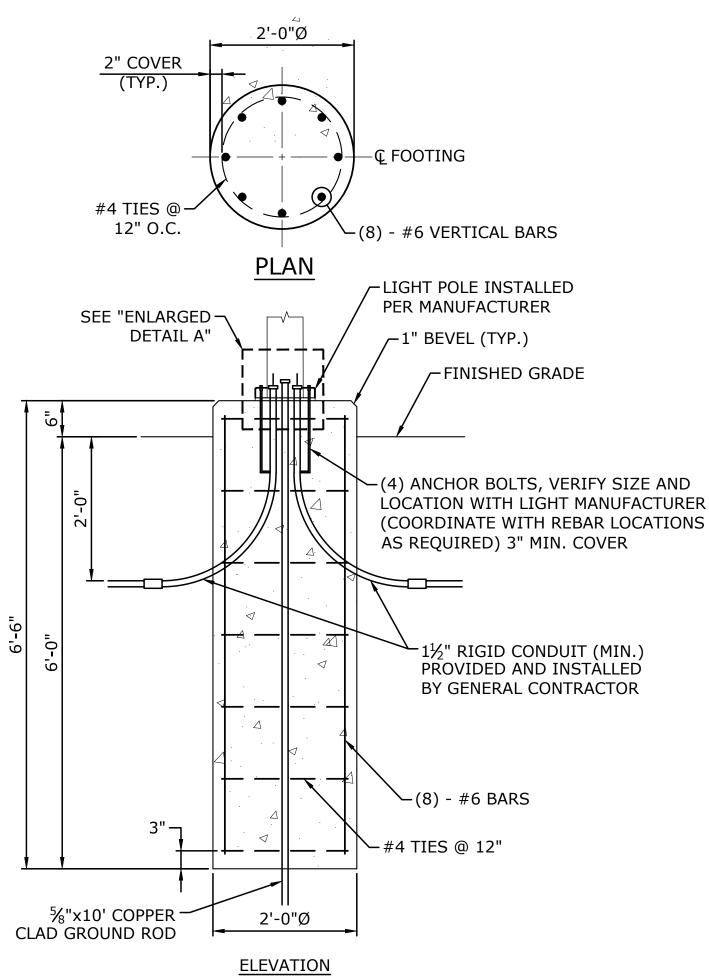
ANALOGUE 14792.00004

PROJECT NO.

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SHEET NO.

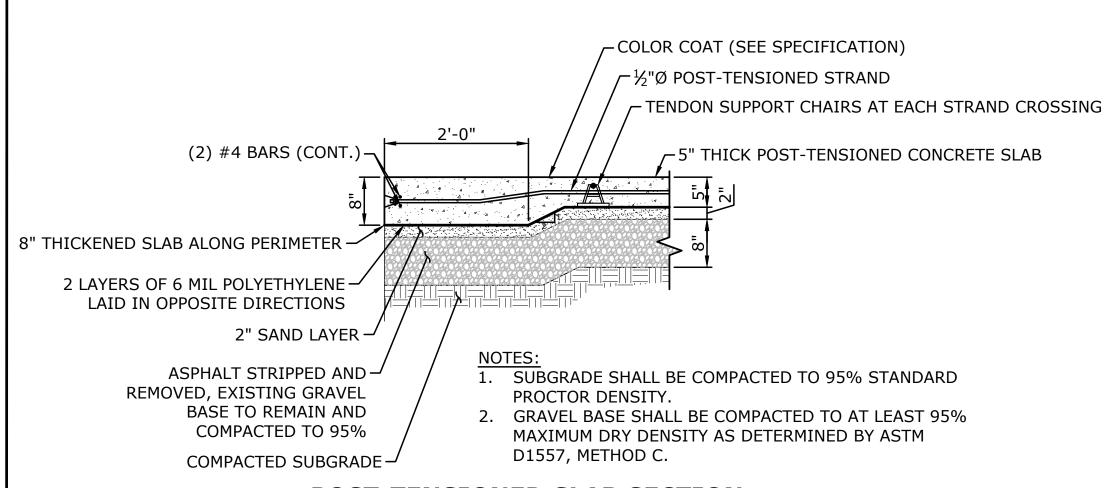
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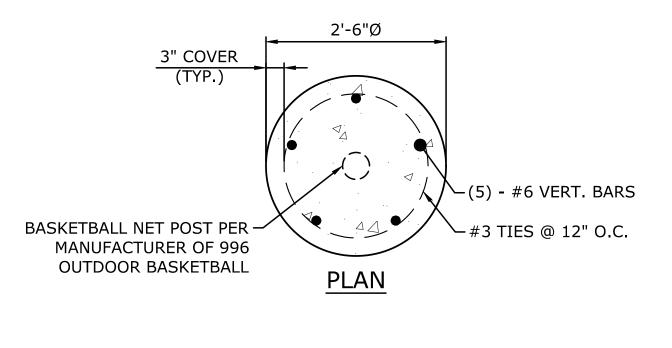
PARKING LIGHT POLE FOUNDATION DETAIL

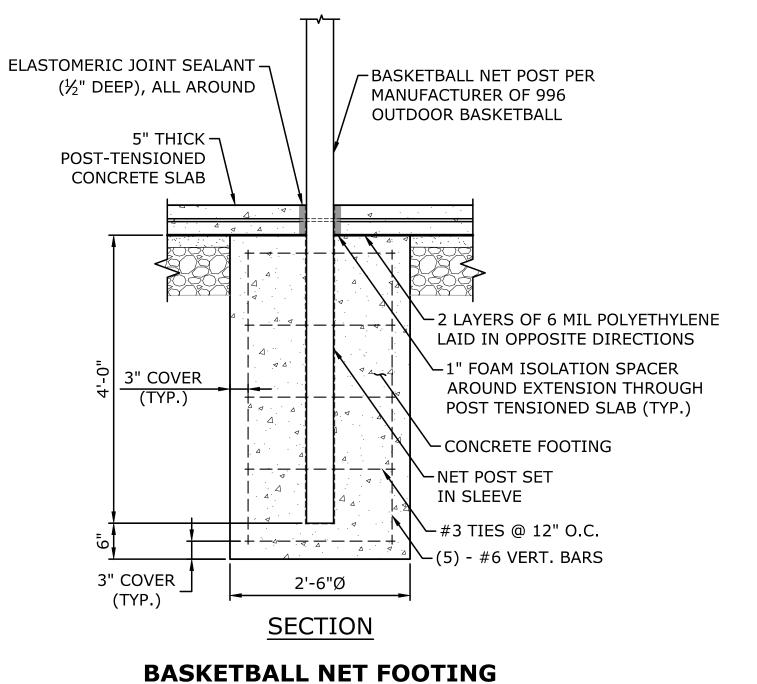
SCALE: $\frac{3}{4}$ "=1'-0"

BID ALTERNATE NO.1 - POST-TENSIONED BASKETBALL COURT



POST-TENSIONED SLAB SECTION SCALE: 3/4"=1'-0"



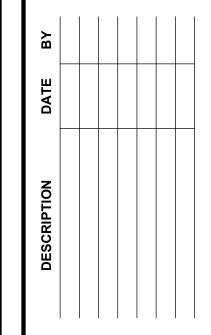


SCALE: 3/4"=1'-0"

GENERAL NOTES FOR POST-TENSIONED CONCRETE SLAB SYSTEM:

- 1. CONTRACTOR PERFORMING WORK SHALL HAVE A MINIMUM LEVEL 1 CERTIFICATION FROM THE POST TENSIONING INSTITUTE.
- 2. ALL POST-TENSIONING MATERIALS SHALL BE SUPPLIED BY A POST-TENSIONING INSTITUTE (PTI) CERTIFIED PLANT.
- 3. <u>SPECIFICATIONS</u>: LATEST POST-TENSIONING INSTITUTE (PTI) SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS AND LATEST ACI 423.7 SPECIFICATION FOR UNBONDED SINGLE-STRAND TENDON MATERIALS.
- 4. INSTALL TENDONS ACCORDING TO INSTALLATION DRAWINGS AND PROCEDURES IN PTI'S "FIELD PROCEDURES MANUAL FOR UNBONDED SINGLE STRAND TENDONS."
- 5. <u>CONCRETE FOOTINGS</u>: BASKETBALL POST SLEEVE SHALL BE PLACED IN INDEPENDENT ISOLATED CONCRETE FOOTINGS AND INSTALLED PRIOR TO PLACEMENT OF POST-TENSIONED CONCRETE SLAB. POST SHALL BE SEPARATED FROM THE SLAB BY A SEALED EXPANSION JOINT.
- 5. <u>POLYETHYLENE SHEETING</u>: TWO (2) LAYERS OF 6 MIL POLY SHEETING LAID IN OPPOSITE DIRECTIONS SHALL COVER ENTIRE COURT AREA UNDER SLAB.
- POST-TENSIONED STRANDS: STRANDS SHALL BE 7 WIRE 1/2" DIAMETER LOW RELAXATION SHEATHED STRANDS CONFORMING TO THE REQUIREMENTS OF ASTM A416, LATEST REVISION, WITH A GUARANTEED MINIMUM ULTIMATE STRENGTH OF 270,000 PSI. JACKING FORCE SHALL BE 33,000 LBS/STRAND.
- 8. STRANDS SHALL BE COATED WITH A RUST PREVENTIVE LUBRICANT AND ENCASED IN AN EXTRUDED PLASTIC SLIPPAGE SHEATHING. THE SHEATHING THICKNESS SHALL BE A MINIMUM OF 0.050 INCHES (50 MILS). AFTER INSTALLING FORMS AND PRIOR TO CONCRETE PLACEMENT, SHEATHING SHALL BE INSPECTED. DAMAGED AREAS SHALL BE REPAIRED BY RESTORING TENDON COATING AND REPAIRING SHEATHING. REPAIRS SHALL BE WATERTIGHT AND WITHOUT AIR SPACES. TAPE REPAIR PROCEDURES FOR SHEATHING SHALL CONFORM TO PTI'S "FIELD PROCEDURES MANUAL FOR UNBONDED SINGLE STRAND TENDONS."
- 9. POCKET FORMERS SHALL BE PROVIDED AT ALL STRESSING ANCHORAGES AND SHALL BE COATED WITH FORM RELEASE AGENT PRIOR TO INSTALLATION FOR EASY REMOVAL.
- 10. APPROPRIATE ANCHORAGES SHALL BE PROVIDED FOR DEAD END AND LIVE END STRESSING ANCHORS.
- 11. TENDONS SHALL BE FABRICATED WITH SUFFICIENT LENGTH BEYOND THE EDGE FORMS TO ALLOW STRESSING. A MINIMUM LENGTH OF 18 INCHES FROM EACH STRESSING END IS REQUIRED.
- 12. TENDONS THAT ARE TO BE STRESSED FROM ONE END ONLY SHALL HAVE FIXED-END ANCHORAGES ATTACHED TO ONE END PRIOR TO SHIPMENT.
- 13. TO MINIMIZE TENDON SEATING LOSSES, JACKS SHALL BE EQUIPPED WITH A WEDGE SEATING DEVICE, EITHER SPRING OR HYDRAULICALLY ACTUATED. THE USE OF JACKS WITHOUT WEDGE SEATING DEVICES WILL NOT BE PERMITTED.
- 14. PLACE CHAIRS AT THE INTERSECTIONS OF ALL TENDONS AND SECURELY TIE TENDONS TOGETHER AND TO CHAIRS WITHOUT DAMAGING SHEATHING. PLACE TENDONS STRAIGHT AND LEVEL. VERTICAL PLACEMENT TOLERANCE SHALL BE WITHIN 1/2" FROM THE SPECIFIED TENDON LOCATION. TENDONS SHALL BE INSTALLED PER THE RECOMMENDATIONS OF POST-TENSIONING INSTITUTE'S CONSTRUCTION AND MAINTENANCE PROCEDURES MANUAL FOR SLAB-ON-GROUND CONSTRUCTION, LATEST EDITION.
- 15. PROVIDE PERIMETER REINFORCING BARS ALONG THE EDGES OF THE SLAB AT ANCHORAGES. REINFORCING BARS SHALL BE PROVIDED AT ALL EDGES AT BOTH DEAD ENDS AND LIVE STRESSING ENDS OF TENDONS.
- 16. CONCRETE: CONCRETE SHALL BE 3500 PSI WITH 3/4" AGGREGATE AS SPECIFIED IN ASTM C-150. CALCIUM CHLORIDE OR OTHER MATERIALS CONTAINING CHLORIDES ARE NOT PERMITTED AS ADMIXTURES. SLAB THICKNESS SHALL BE 5" MINIMUM AND SHALL BE POURED IN THE SEQUENCE COINCIDING WITH THE POUR NUMBER AND LAYOUT SHOWN.
- 17. COMPRESSIBLE EXPANSION JOINT MATERIAL OR FILLER WITH A MINIMUM THICKNESS OF 1 INCH SHALL BE WRAPPED AROUND THE HOOP POST FOUNDATION FOR THE FULL DEPTH OF THE PENETRATIONS THROUGH THE COURT SLAB. THE MATERIAL MUST BE CAPABLE OF MAINTAINING THE MINIMUM 1 INCH DIMENSION DURING CONCRETE PLACEMENT.
- 18. AFTER FORMS ARE REMOVED AND CONCRETE HAS REACHED A MINIMUM OF 2400 PSI, TENSIONING PROCEDURE MAY BE APPLIED ACCORDING TO PTI SPECIFICATIONS.
- 19. STRESSING POCKETS SHALL BE FILLED WITH NON-SHRINK GROUT WITHIN ONE DAY AFTER TENDON ACCEPTANCE AND CUTTING.
- 20. NON-SHRINK GROUT SHALL CONSIST OF A HIGH STRENGTH GROUT AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 8000 PSI. GROUT SHALL BE A NON-FERROUS MATERIAL BLENDED OF CAREFULLY GRADED SILICA AGGREGATE, SELECT PORTLAND CEMENT AND EXPANSIVE AGENTS OR ADMIXTURES.
- 21. GROUT SHALL BE MIXED, PLACED AND CURED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PLACEMENT SHALL BE IN A MANNER AS TO PREVENT OR AVOID AIR POCKETS OR VOIDS.
- 22. SURFACE COURSE: THE COLOR FINISH SHALL BE IN THE SELECTED AND APPROVED BY OWNER. SEE PROJECT SPECIFICATIONS.
- 23. THE CONTRACTOR SHALL SURVEY, MARK, AND APPLY 2" WIDE, WHITE PLAYING LINES ACCORDING TO THE PLANS AND SPECIFICATIONS. BASE LINE SHALL BE 4"
- 24. BASKETBALL HOOP: SEE SPECIFICATIONS.
- 25. CONTRACTOR SHALL PROVIDE SHOP-DRAWINGS PRIOR TO START OF WORK, PRODUCED AND SIGNED BY A POST TENSION ENGINEER, AND MUST BE ACCOMPANIED BY DESIGN CALCULATIONS AND CONSTRUCTION SEQUENCE.

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NORTH END FIELD
BALLFIELD RECONSTRUCTION

KCF GB K
DESIGNED DRAWN CHEC

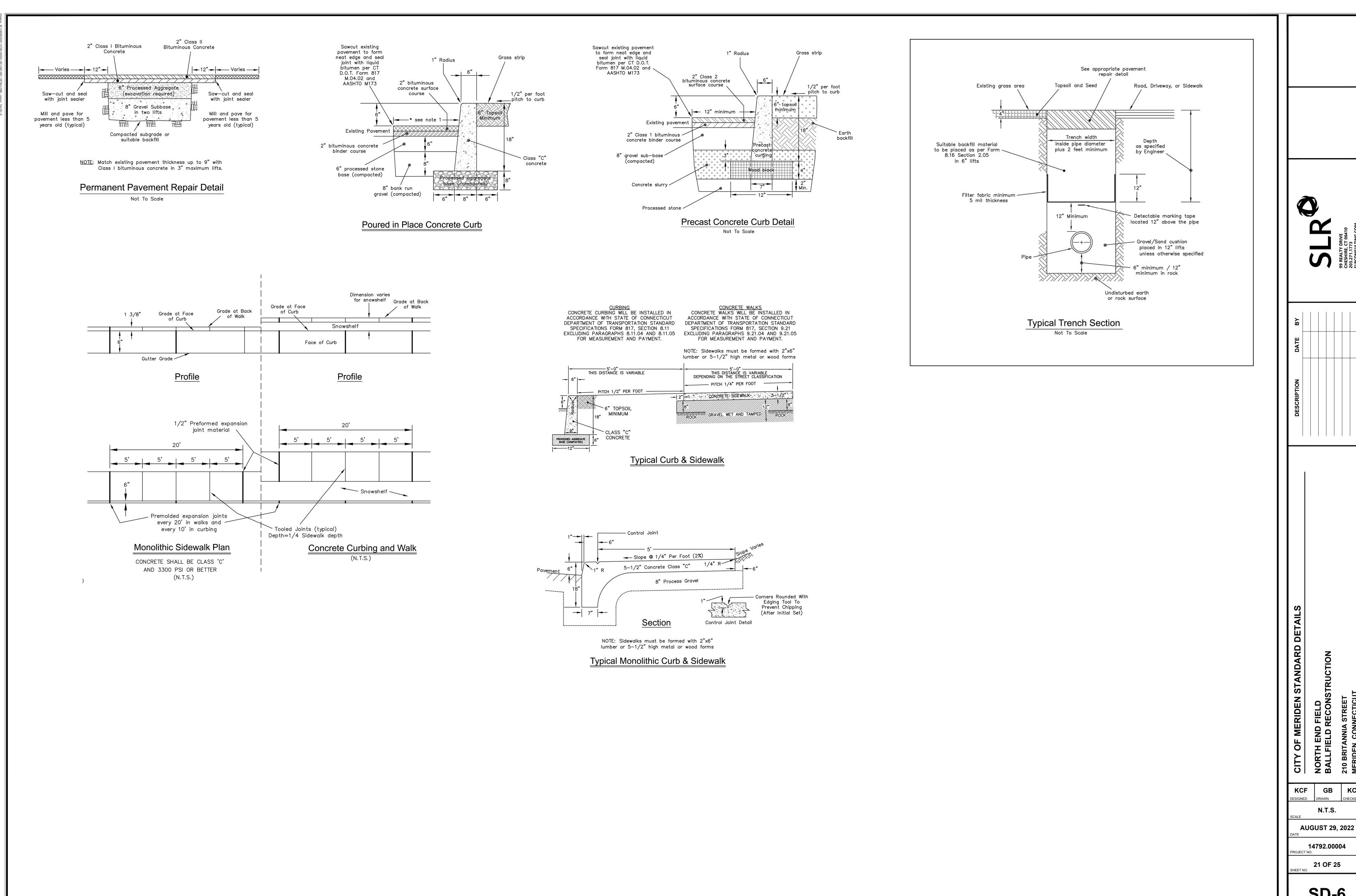
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SD-6

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ELECTRICAL GENERAL NOTES

- UNLESS OTHERWISE INDICATED. FURNISH AND INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM INCLUDING ALL NECESSARY MATERIAL, LABOR, AND EQUIPMENT.
- ELECTRICAL PLANS AND DETAILS, AND ONE LINE DIAGRAMS SHOW THE GENERAL LOCATION AND ARRANGEMENT OF THE ELECTRICAL SYSTEM. THEY ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT BODIES, CONNECTORS, BENDS, FITTINGS, HANGERS, AND ADDITIONAL PULL AND JUNCTION BOXES WHICH THE CONTRACTOR MUST PROVIDE TO COMPLETE THE ELECTRICAL SYSTEM.
- ALL EQUIPMENT AND MATERIAL SHALL BE LABELED AND LISTED, AND INSTALLED IN ACCORDANCE WITH THEIR LISTING.
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND ARRANGE FOR ALL REQUIRED INSPECTIONS IN ACCORDANCE WITH STATE GOVERNING AUTHORITIES.
- ALL WORK SHALL BE DONE WITH LICENSED WORKMEN IN ACCORDANCE WITH STATE GOVERNING AUTHORITY.
- THE DEFINITION OF ELECTRICAL TERMS USED SHALL BE AS DEFINED IN THE NATIONAL ELECTRICAL CODE, 2017 EDITION.
- THE TERM "INDICATED" SHALL MEAN "AS SHOWN ON CONTRACT DOCUMENTS (SPECIFICATIONS, DRAWINGS, AND RELATED ATTACHMENTS)".
- THE TERM "SIZE" SHALL MEAN ONE OR MORE OF THE FOLLOWING: "LENGTH, CURRENT AND VOLTAGE RATING, NUMBER OF POLES, NEMA SIZE, AND OTHER SIMILAR ELECTRICAL CHARACTERISTICS".
- THE TERM "SPACE" ON PANELBOARD AND SWITCHBOARD SCHEDULES SHALL MEAN "PROVIDE SPACE TO INSTALL THE NUMBER OF POLES AND SIZE OF THE PROTECTIVE DEVICE INDICATED WITH ALL THE NECESSARY BUS AND FITTINGS TO INSTALL THE DEVICE AT SOME FUTURE DATE".
- COORDINATE ELECTRICAL WORK WITH OWNER.
- 1. COORDINATE ELECTRICAL WORK WITH OTHER DIVISIONS OF THIS PROJECT.
- BEFORE SELECTING MATERIAL AND EQUIPMENT, AND PROCEEDING WITH WORK INSPECT AREAS WHERE MATERIAL AND EQUIPMENT ARE TO BE INSTALLED TO INSURE SUITABILITY, AND CHECK NEEDED SPACE FOR REPLACEMENT, CLEARANCES AND INTERCONNECTIONS.
- BEFORE CUTTING OR DRILLING INTO BUILDING ELEMENTS INSPECT AND LAYOUT WORK TO AVOID DAMAGING STRUCTURAL ELEMENTS AND BUILDING UTILITIES.
- 14. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, 2017 EDITION.

POLE MOUNTED PARKING LOT LIGHT FIXTURE - REFER TO SCHEDULE ON

SYMBOL	DESCRIPTION	
НН	HANDHOLE / PULL BOX	
Ф	DUPLEX RECEPTACLE / OUTLET	

QUADRUPLEX RECEPTACLE / OUTLET

DRAWING ES-1 FOR ADDITIONAL INFORMATION

ELECTRICAL LEGEND

ABBREVIATIONS

ABBREVIATIONS DESCRIPTION

AMPERES ALTERNATING CURRENT (60 HZ) A/C AIR CONDITIONING ADA AMERICANS WITH DISABILITIES ACT AFCI ARC FAULT CIRCUIT INTERRUPTER **AFFV** ABOVE FINISHED FLOOR ATS **AUTOMATIC TRANSFER SWITCH** AUX **AUXILIARY** AWG AMERICAN WIRE GAUGE BF BALLAST FACTOR

BR BRANCH CONDUIT CIRCUIT BREAKER CIRCUIT **CURRENT TRANSFORMER** COPPER

CB CIR CT CU DISHWASHER DISC DISCONNECT DW DISHWASHER DWG DRAWING DWU DISTILLED WATER UNIT EXISTING TO REMAIN EMT **ELECTRICAL METALLIC TUBING**

EQUIP EQUIPMENT EX/ETR **EXISTING EQUIPMENT TO REMAIN** FDR **FEEDER** FLOOR

HEAT DETECTOR

INSULATED GROUND

THOUSAND CIRCUIT MILLS

LIGHTING PANELBOARD

MAIN CIRCUIT BREAKER

MOTOR-CIRCUIT SWITCH

NATIONAL ELECTRIC CODE

POUNDS PER SQUARE INCH

RIGID GALVANIZED STEEL CONDUIT

POLYVINYL CHLORIDE

REMOVE EXISTING ITEM

RELOCATE EXISTING ITEM

RIGID NONMETALLIC CONDUIT

MAIN DISTRIBUTION PANELBOARD

NEW LOCATION OF RELOCATED ITEM

NATIONAL ELECTRICAL CONTRACTORS ASSOC.

NATIONAL ELECTRICAL MANUFACTURERS ASSOC.

MOTOR CONTROLLER

MCC/MCB MOLDED CASE CIRCUIT BREAKER

HAND-HOLE

ICE MAKER

INCHES

JUNCTION

KILOVOLT

KILOWATT

LIGHTING

MANHOLE

NEUTRAL

POLE

PHASE

PULL BOX

PRIMARY

POWER

REMAIN

PHOTO CELL

PANELBOARD

RECEPTACLE

REFRIGERATOR

RAINTIGHT

SCHEDULE

SERVICE DROP

SOLENOID VALVE

TIME CONTROLLER

SYMMETRICAL

TELEPHONE

TELEVISION

UNDERGROUND

VOLT-AMPERES

WEIGHT IN POUNDS

WIRE GUARD

WATERTIGHT

TRANSFORMER

UNDERWRITER'S LABORATORY

WALL PHONE OR WEATHERPROOF

UNLESS OTHERWISE NOTED

UNDER VOLTAGE RELEASE

TYPICAL

UTILITY

VOLTS

WATTS

REMOVE

PERCENT

NUMBER

FEET

INCHES

SECONDARY

STUNT TRIP

SURFACE

SWITCH

SYMBOL

RIGID STEEL CONDUIT

SERVICE CONDUCTORS

SHORT-CIRCUIT RATING

SERVICE EQUIPMENT

SMOKE DETECTOR

NONFUSED

NOT TO SCALE

OVERCURRENT

PUBLIC ADDRESS

MAIN LUG ONLY

MICROWAVE OVEN

NOT IN CONTRACT

NOT APPLICABLE

METER

IMPEDANCE

KILO AMPERE

KILO VOLT-AMPERE

HORSEPOWER

HD

IMP

KA

ΚV

KW

LP

LTG

MC

MCB

MCS

MDP

MLO

MW

N/A

NEC

NECA

NEMA

NEUT

NF

NIC

N.T.S.

PΑ

PNL

PRI

PSI

PVC

PWR

RECPT

RGS

RL

RM

RNC

REF

RSC

SCHD

SCR

SD

SEC

SURF

SV

SW

SYM

SYMB

TC

TEL

TYP

UG

U.O.N.

UTIL

UVR

WG

WP

WT

XFMR

МН

Kcmils

FEET GFCI/GFI GROUND-FAULT CIRCUIT-INTERRUPTER GROUND-FAULT CIRCUIT EQUIPMENT BREAKER GFP **GROUND-FAULT PROTECTION** GRD GROUND

ALL EXISTING CONDITIONS UNDER WHICH THE WORK AND WORK OF OTHER TRADES WILL BE INSTALLED. THIS CONTRACT INCLUDES ALL NECESSARY OFFSETS. TRANSITIONS. MODIFICATIONS AND RELOCATION REQUIRED TO INSTALL ALL NEW EQUIPMENT IN NEW OR EXISTING SPACES. CONTRACTOR SHALL INCLUDE ANY MODIFICATIONS REQUIRED IN EXISTING ELECTRICAL EQUIPMENT FOR INSTALLATION OF NEW ELECTRICAL EQUIPMENT AND NEW FOUIDMENT OF OTHER TRADES (LIGHTING FIXTURES, DEVICES, CONDUIT WIRING, ETC.) ALL NEW AND EXISTING EQUIPMENT AND SYSTEMS SHALL BE FULLY OPERATIONAL UNDER THIS CONTRACT BEFORE THE PROJECT IS CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS THAT ARE MADE, ANY OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS OF ALL TRADES.

CODES, REGULATIONS AND STANDARDS

ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING APPROVED CODES:

STATE DEMOLITION CODE STATE BUILDING CODE STATE FIRE SAFETY CODE LOCAL BUILDING CODE IBC - INTERNATIONAL BUILDING CODE NFPA - NATIONAL FIRE PROTECTION CODE

ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION U.L. - UNDERWRITERS LABORATORIES NFPA 101 - LIFE SAFETY CODE

ELECTRICAL SPECIFICATIONS

FOR PROPER AND COMPLETE INSTALLATION.

WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS.

'CONTRACTOR' - THE ELECTRICAL CONTRACTOR.

NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.

'NOTED' - AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.

<u>DEFINITIONS</u>

PART 1 - GENERAL PROVISIONS FOR ELECTRICAL WORK

THIS SECTION COVERS THE GENERAL REQUIREMENTS FOR ELECTRICAL WORK; EXAMINE ALL CONTRACT

OF PARTICULAR WORK REFERRED TO UNLESS, SPECIFICALLY OTHERWISE NOTED.

'INSTALL' - TO ERECT. MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES

'WIRING' - RACEWAY, FITTINGS, WIRE, BOXES, MOUNTING HARDWARE AND RELATED ITEMS.

DRAWINGS AND ALL OTHER SECTIONS OF THE SPECIFICATIONS FOR ADDITIONAL WORK RELATED TO THE WORK

'PROVIDE' - TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION

'WORK' - LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED

'CONCEALED' - EMBEDDED IN MASONRY OR OTHER CONSTRUCTION CAVITY, INSTALLED IN FURRED SPACES,

'SIMILAR' OR 'EQUAL' - EQUAL MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

THIS WORK SHALL CONSIST OF THE FURNISHINGS OF ALL LABOR, MATERIALS AND SERVICES REQUIRED.

COMPLETE, READY FOR CORRECT OPERATION FOR ALL ELECTRICAL WORK CALL FOR BY THE ACCOMPANYING

DRAWINGS AND SPECIFICATIONS. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE

THE DATA INDICATED IN THESE DRAWINGS AND SPECIFICATIONS ARE AS EXACT AS COULD BE SECURED. BUT

THEIR ABSOLUTE ACCURACY IS NOT GUARANTEED, DO NOT SCALE DRAWINGS, EXACT LOCATIONS, DISTANCES

LEVELS AND OTHER CONDITIONS WILL BE GOVERNED BY THE BUILDING. USE THE DRAWINGS AND SPECIFICATIONS

FOR GUIDANCE AND SECURE THE ENGINEER'S APPROVAL OF CHANGES IN LOCATIONS, CIRCUITS, WHERE SHOWN

UNLESS SPECIFICALLY INDICATED. CIRCUITS SHALL BE RUN IN SUITABLE CONDITIONS CONSIDERING STRUCTURAL

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH

ON AN ELECTRICAL DRAWINGS, ARE SO INDICATED PRIMARILY FOR THE PURPOSE OF INDICATING THE GENERAL

CIRCUIT PLAN AND DO NOT NECESSARILY INDICATE THE EXACT LOCATION OF ROUTING OF THE RACEWAYS

FEATURES, OTHER TRADES, CONSTRUCTION METHODS AND GOOD INSTALLATION PRACTICE.

NFPA 99 - HEALTH FACILITIES CODE NFPA 70 - NATIONAL ELECTRICAL CODE NFPA 72 - NATIONAL FIRE ALARM CODE EPA - ENVIRONMENTAL PROTECTION AGENCY IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION IECC - INTERNATIONAL ENERGY CONSERVATION CODE ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

PERMITS, FEES AND INSPECTIONS

THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES OBTAIN ALL PERMITS PAY FOR ALL GOVERNMENT STATE SALES TAXES AND APPLICABLE FEES. THE CONTRACTOR SHALL FILE ALL DRAWINGS. COMPLETE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS FROM THE PROPER AUTHORITY OR AGENCY HAVING JURISDICTION. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION COVERING WORK. THE CONTRACTOR SHALL SEE THAT ALL REQUIRED INSPECTIONS AND TESTS ARE MADE AND SHALL COOPERATE TO MAKE THESE TESTS AS THOROUGH AND AS READILY MADE AS POSSIBLE.

MATERIALS AND WORKMANSHIP

ALL MATERIALS AND APPARATUS REQUIRED FOR THE WORK, EXCEPT AS OTHERWISE SPECIFIED, SHALL BE NEW AND OF FIRST-CLASS QUALITY. IT SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED, FINISHED IN EVERY DETAIL AND SO SELECTED AND ARRANGED AS TO FIT PROPERLY INTO THE BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY MATERIAL IS GIVEN, A FIRST-CLASS STANDARD ARTICLE AS ACCEPTED BY THE ENGINEER SHALL BE FURNISHED.

ALL EQUIPMENT AND MATERIALS SHALL BE SPECIFICATION GRADE AND BEAR THE UNDERWRITER'S LABEL. NO SUBSTITUTE OR ALTERNATE EQUIPMENT, MATERIAL, ETC. WILL BE CONSIDERED FOR THIS PROJECT

ALL WORK SHALL BE OF A QUALITY CONSISTENT WITH GOOD TRADE PRACTICE AND SHALL BE INSTALLED IN A NEAT WORKMANI IKE MANNER THE ENGINEER/OWNER RESERVES THE RIGHT TO REJECT ANY WORK WHICH IN HIS OPINION. HAS BEEN INSTALLED IN A SUBSTANDARD, DANGEROUS OR IN A UNSERVICEABLE MANNER, THE CONTRACTOR SHALL REPLACE REJECTED WORK IN A SATISFACTORY MANNER AT NO EXTRA COST TO THE

ALL WORKMANSHIP AND MATERIALS SHALL BE FULLY GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE ENTIRE INSTALLATION COVERED BY THIS CONTRACT. SHOULD ANY DEFECTS OCCUR DURING THE GUARANTEED PERIOD, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL DEFECTIVE EQUIPMENT, MATERIAL AND/OR WORK AT NO EXTRA CHARGE TO THE OWNER.

MAINTAIN, AT THE JOB SITE, A SET OF ELECTRICAL DRAWINGS INDICATING ALL CHANGES IN LOCATION OF THE EQUIPMENT, PANELS, DEVICES, ETC. FROM THE ORIGINAL LAYOUT. CLEARLY MARK IN RED ALL CHANGES ON THE DRAWINGS. AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL TURN OVER THE RECORD DRAWINGS TO THE ENGINEER/OWNER.

COORDINATION ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE

GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE.

SUBMIT ELECTRONIC COPIES FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SPECIFIED. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMISSION TO THE ENGINEER FOR REVIEW. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL CONTRACTOR HAS IN THEIR POSSESSION, APPROVED SHOP DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFIC WITH ITEMS SUBMITTED FOR APPROVAL CLEARLY IDENTIFIED.

THE FOLLOWING IS A LIST OF ELECTRICAL ITEMS THAT MUST BE SUBMITTED FOR REVIEW:

a. LIGHTING FIXTURES, DRIVERS AND OTHER RELATED COMPONENTS

o. LIGHTING CONTROLS SYSTEM CONDUIT, WIRE AND CABLE DEVICES (E.G. RECEPTACLES)

. HANDHOLES / PULLBOXES

PANELBOARD g. UTILITY METER SOCKET

OPERATING INSTRUCTIONS

THE CONTRACTOR SHALL FURNISH TO THE OWNER ELECTRONIC SETS OF TYPEWRITTEN OR BLUEPRINTED INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT INCLUDED IN THIS DIVISION. MANUFACTURER'S ADVERTISING LITERATURE OR CATALOGS WILL NOT BE ACCEPTABLE FOR OPERATING AND

THE CONTRACTOR, IN THE ABOVE-MENTIONED INSTRUCTIONS, SHALL INCLUDE THE MAINTENANCE SCHEDULE FOR THE PRINCIPAL ITEMS OF EQUIPMENT FURNISHED UNDER THIS DIVISION.

AN AUTHORIZED MANUFACTURER'S REPRESENTATIVE SHALL ATTEST IN WRITING THAT HIS EQUIPMENT HAS BEEN PROPERLY INSTALLED PRIOR TO STARTUP. THESE LETTERS WILL BE BOUND INTO OPERATING AND MAINTENANCE

PROPERLY AND COMPLETELY PROTECT AGAINST ALL DAMAGE, ALL APPARATUS, EQUIPMENT, ETC., INCLUDED IN THIS CONTRACT. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO FURNISHED APPARATUS, EQUIPMENT, ETC., UNTIL FINAL ACCEPTANCE.

PROPERTY PROTECTION

THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY AND/OR REQUIRED TO PROTECT OWNER'S PROPERTY WITHIN THE WORKING AREAS FROM DUST, DEBRIS AND OTHER MATTER GENERATED BY THE WORK. NO WORK SHALL COMMENCE IN AREAS WHERE PROTECTION IS REQUIRED UNTIL APPROVAL HAS BEEN GIVEN TO THE CONTRACTOR BY THE OWNER.

MANUFACTURER'S INSTRUCTION

INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS FOR PROPER OPERATION AND MAINTENANCE.

EQUIPMENT PAINTING AND CLEANING

THOROUGHLY CLEAN ALL ELECTRICAL EQUIPMENT DEVICES AND ENCLOSURES UPON COMPLETION OF ALL WORK. REPAINT ANY EQUIPMENT WHOSE FINISH IS DAMAGED OR RUSTED. MATCH MANUFACTURER'S ORIGINAL FINISH.

ALL PENETRATIONS SHALL BE SEALED WITH 3M INTUMESCENT FIRE BARRIER PENETRATION SEALANT, APPLIED PER MANUFACTURER'S AND U.L. GUIDELINES.

CUTTING, PATCHING, REPAIRING AND PAINTING

THE GENERAL CONTRACTOR SHALL PERFORM ALL CUTTING, PATCHING, REPAIRING AND PAINTING FOR ALL ELECTRICAL ITEMS AND EQUIPMENT CALLED FOR UNDER THIS CONTRACT

TEMPORARY LIGHT AND POWER

FURNISH AND INSTALL TEMPORARY ELECTRICAL SERVICE OF SUFFICIENT SIZE FOR POWER AND LIGHTING USE BY ALL TRADE CONTRACTORS DURING THE COURSE OF CONSTRUCTION. ALL TEMPORARY WORK SHALL BE DONE IN COMPLIANCE WITH ALL APPLICABLE ARTICLES IN THE NATIONAL ELECTRICAL CODE, O.S.H.A. AND WITH ALL REQUIREMENTS OF ANY AUTHORITY HAVING JURISDICTION OVER THE WORK, PROVIDE TEMPORARY POWER CONNECTION TO A CONSTRUCTION TRAILER. THE LOCATION OF THE TRAILER IS TO BE DETERMINED ON SITE. PROVIDE FEEDER TO TRAILER OF SUFFICIENT SIZE TO POWER HEATING. AIR CONDITIONING. GENERAL POWER AND LIGHTING

PART 2 - PRODUCTS

DESCRIPTION

ALL MATERIALS AND EQUIPMENT PROVIDED UNDER THIS SECTION SHALL BE NEW, FIRST GRADE, BEST OF THEIR RESPECTIVE KINDS AND IN NO WAY SHALL THEY BE LESS THAN THE QUALITY AND INTENT SET FOURTH UNDER THIS SECTION. THEY SHALL MEET THE REQUIREMENTS OF ALL STANDARDS SET UP TO GOVERN THE MANUFACTURER OF ELECTRICAL MATERIALS AND COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.

WIRE

CONDUCTORS SHALL BE U.L. LISTED, 600 VOLTS, 90 DEG. C., SINGLE CONDUCTOR TYPE THWN/THHN. 98% CONDUCTIVITY, ANNEALED UNCOATED COPPER WITH PVC INSULATION COVERED WITH NYLON SHEATH JACKET TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF UNDERWRITERS LABORATORIES STANDARD 83. WIRE SHALL BE IDENTIFIED BY SURFACE MARKING INDICATING MANUFACTURER'S IDENTIFICATION CONDUCTOR SIZE AND METAL, VOLTAGE RATING, U.L. SYMBOL AND TYPE DESIGNATION. CONDUCTORS SHALL BE STRANDED. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE INDICATED. MANUFACTURED BY ROME CABLE, TRIANGLE WIRE & CABLE, GENERAL CABLE OR ESSEX WIRE & CABLE.

RIGID GALVANIZED STEEL CONDUIT (RGS)

RIGID STEEL CONDUIT SHALL BE FULL WEIGHT, HEAVY WALL STEEL PIPE WITH GALVANIZED PROTECTIVE COATING. MANUFACTURED BY TRIANGLE WIRE AND CABLE, ALLIED TUBE AND CONDUIT, REPUBLIC OR STEELDUCT. CONDUIT FITTINGS SHALL BE MALLEABLE IRON, CADMIUM PLATED WITH FULL THREADED HUBS.

RIGID POLYVINYL CHLORIDE CONDUIT (PVC)

RIGID POLYVINYL CHLORIDE CONDUIT SHALL BE SUNLIGHT RESISTANT, RATED OR USE WITH 90 DEGREES C. CONDUCTORS, U.L. RATED. ALL PVC CONDUIT AND FITTINGS SHALL BE SOLVENT WELDED. MANUFACTURED BY CARLON, ELECTRI-FLEX OR PLASTILINE

USE SCHEDULE 80 PVC CONDUIT UNDER PARKING LOT AND OTHER AREAS SUBJECT TO VEHICULAR TRAVEL. USE SCHEDULE 40 PVC CONDUIT UNDER WALKWAYS AND GRASS AREAS.

ELECTRIC METALLIC TUBING (EMT)

ELECTRICAL METALLIC TUBING SHALL BE GALVANIZED THIN WALL STEEL CONDUIT. MANUFACTURED BY TRIANGLE WIRE AND CABLE, ALLIED TUBE AND CONDUIT, REPUBLIC OR STEELDUCT. THE CONNECTORS AND COUPLINGS SHALL BE HEAVY DUTY, STEEL-ZINC PLATED, SET SCREW TYPE.

CONDUIT BODIES FOR RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE MALLEABLE IRON-ZINC PLATED WITH TAPERED HUBS AND GASKETED ALUMINUM COVER

CONDUIT BODIES FOR ELECTRICAL METALLIC TUBING (EMT) SHALL BE CAST ALUMINUM-ALUMINUM ENAMEL FINISH WITH SET SCREW HUBS AND ALUMINUM COVER.

INSULATION BUSHINGS SHALL BE HIGH IMPACT THERMOPLASTIC PHENOLIC WITH 150 DEG. C. UL TEMPERATURE INSULATED GROUNDING BUSHINGS SHALL BE MALLEABLE IRON ZINC PLATED WITH MOLDED ON PHENOLIC

INSULATION AND LAY-IN GROUNDING LUG.

CONDUIT LOCKNUTS SHALL BE HEAVY NUT STOCK STEEL-ZINC PLATED.

OFFSET NIPPLES SHALL BE MALLEABLE IRON ZINC PLATED WITH RIGID CONDUIT THREADING AND 3/4" OFFSET. CONNECTORS AND COUPLINGS FOR ELECTRICAL METALLIC TUBING (EMT) SHALL BE HEAVY STEEL-ZINC PLATED WITH PRE-SET/PRE-SHAKED SET SCREWS.

CONDUIT STRAPS SHALL BE SNAP-TYPE, DOUBLE RIBBED STEEL-ZINC PLATED.

CONDUIT FITTINGS SHALL BE MANUFACTURED BY O/Z GEDNEY, CROUSE-HINDS OR APPLETON. SUPPORT FITTINGS

SUPPORT CHANNEL SHALL BE ROLL-FORMED #12 GAUGE STEEL, SOLID BASE OR BOLT HOLE BASE - HOT DIP GALVANIZED FINISH. COMPLETE WITH ANGLE FITTINGS, SPRING NUTS, CONDUIT SUPPORTS, 3/8" OR 1/2" THREADED RODS (SIZE REQUIRED FOR LOAD), ETC

CABLE TIES SHALL BE FABRICATED OF ONE-PIECE HALLAR WITH NO METAL PARTS. MANUFACTURED BY BURNDY,

T&B, PANDUIT OR BLACKBURN

MANUFACTURED BY STEEL CITY OR RACO.

OUTLET BOXES SHALL BE GALVANIZED STEEL, FLUSH OR SURFACE MOUNTED AND OF PROPER TYPE AND SIZE AS REQUIRED FOR THE PARTICULAR APPLICATION. SIZE AND TYPE DICTATED BY THE NUMBER OF DEVICES (2 GANG MINIMUM WITH SINGLE GANG PLASTER RING FOR SINGLE DEVICE LOCATIONS), NUMBER OF CONDUCTORS AND WIRING METHOD UTILIZED. BOXES SHALL BE ADEQUATE SIZE FOR THE INSTALLATION OF CONDUCTORS WITHOUT EXCESSIVE BENDING OR CRIMPING OF THE CONDUCTORS AND DAMAGING OF CONDUCTOR INSULATION.

OUTLIET BOXES SHALL BE SECURED FIRMLY IN PLACE AND SET TRUE AND SQUARE, PROVIDE SUITABLE MEANS TO SUPPORT OUTLET BOX TO TAKE THE WEIGHT OF THE LIGHTING FIXTURE OR DEVICE. OUTLET BOXED OR BOX EXTENSION RINGS SHALL BE SET FLUSH TO THE FINISHED WALL OR CEILING. BOXES MUST BE ATTACHED THAT THEY WILL NOT 'ROCK', 'SHIFT' OR 'MOVE IN AND OUT' WHEN DEVICES ARE USED. IN NO CASE SHALL BOXES BE INSTALLED BACK-TO-BACK IN A COMMON WALL DIVIDING TWO SPACES.

<u>PANELBOARDS</u>

PANELBOARDS SHALL BE THE COMBINATION THERMAL/MAGNETIC CIRCUIT BREAKER TYPE. 3 PHASE, 4 WIRE WITH THE NUMBER OF BRANCH CIRCUITS AS INDICATED ON THE SCHEDULES. PROVIDE WITH FULLY RATED HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVE PHASE AND GROUND BUS. LUGS SIZED TO ACCOMMODATE WIRE QUALITY AND SIZES. PANELS SHALL BE U.L. LISTED. DOOR-IN-DOOR DESIGN. BOXES SHALL BE CORROSION RESISTANT, ZINC FINISH GALVANIZED, FRONTS SHALL BE REINFORCED STEEL POWDER FINISH PAINTED LIGHT GRAY (ANSI-61) AND SHALL BE EQUIPPED WITH CONCEALED HINGES AND CONCEALED TRIM ADJUSTING SCREWS. DIRECTORY CARD HOLDERS SHALL BE CORROSION-PROOF VALOX WITH RETRACTABLE LATCH, KEYED ALIKE. PHASE BUS SHALL BE SEQUENCED AND FULLY INSULATED RATINGS SHALL BE DISPLAYED ON THE DEAD FRONT SHIELD AND TOTALLY VISIBLE WITH THE DOOR OPEN. REFER TO SCHEDULES FOR OTHER REQUIREMENTS.

CIRCUIT BREAKERS

BRANCH CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, BOLT-IN THERMALMAGNETIC TYPE WITH VISIBLE CURRENT RATING AND TRIP POSITION. MANUFACTURED BY GENERAL ELECTRIC, SIEMENS, SQUARE 'D' OR CUTLER HAMMER. REFER TO SCHEDULES FOR AIC RATING

ALL MULTI-POLE BREAKERS SHALL BE EQUIPPED WITH HANDLE TIES FOR MULTI-POLE USE.

PHASE SEQUENCE AND BALANCING

MAINTAIN CORRECT PHASE SEQUENCE OF ALL FEEDERS AND CIRCUITS WITH PHASE IDENTIFICATION THROUGHOUT THE ENTIRE SYSTEM. BALANCING ALL FEEDERS AND CIRCUITS TO WITHIN 10 PERCENT.

JUNCTION BOXES, PULLBOXES AND HANDHOLES

JUNCTION BOXES, PULLBOXES AND WIREWAYS SHALL BE OF PROPER TYPE AND SIZES AS REQUIRED. CODE GAUGE, GALVANIZED STEEL WITH KNOCKOUTS AND FLANGES TO RECEIVE THE COVERS. COVERS SHALL BE FLAT,

HOFFMAN, SQUARE 'D', OR LEE PRODUCTS. UNDERGROUND HANDHOLES SHALL BE POLYMER CONCRETE, OPEN BOTTOM TYPE, SIZE AS REQUIRED TO

OF THE SAME MATERIAL AS THE BOX AND FASTENED TO THE BOX WITH MACHINE SCREWS. MANUFACTURED BY

ACCOMMODATE CONDUIT QUANTITIES AND ENTRY POINTS. TIER RATING AS APPROPRIATE FOR INSTALLATION LOCATION. QUAZITE OR EQUAL. WIRING DEVICES

ALL DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE, U.L. LISTED, SELF-GROUNDING, GROUND LUG,

SIDE/BACK WIRED, 20A RATED. COLOR SHALL BE SELECTED BY ARCHITECT OR OWNER UNLESS OTHERWISE INDICATED. MANUFACTURED BY HUBBELL, LEVITON, OR PASS & SEYMOUR RECEPTACLES LOCATED IN WET LOCATIONS SHALL BE INSTALLED WITH AN OUTLET ENCLOSURE CLEARLY MARKED 'SUITABLE FOR WET LOCATIONS WHILE IN USE'. THERE MUST BE A GASKET BETWEEN THE COVER AND

THE BASE TO ASSURE A PROPER SEAL. THE ENCLOSURE MUST EMPLOY STAINLESS STEEL MOUNTING HARDWARE

AND BE CONSTRUCTED OF IMPACT RESISTANT POLYCARBONATE. THE OUTLET ENCLOSURE SHALL BE U.L. LISTED.

MANUFACTURED BY TAYMAC, CARLON, OR APPROVED EQUAL.

FURNISH AND INSTALL ALL LIGHTING FIXTURES AS SPECIFIED ON THE SCHEDULES, COMPLETE WITH ALL ACCESSORIES, LOUVERS, LAMPS AND MOUNTING HARDWARE. THE FIXTURES SHOWN ARE MARKED AS TYPE A, B,

PROVIDE BASIS OF DESIGN FIXTURES LISTED IN LIGHTING FIXTURE SCHEDULE. ANY PROPOSED ALTERNATIVE LIGHTING FIXTURES SHALL BE EQUAL TO OR BETTER THAN THE BASIS OF DESIGN FIXTURES AS IT RELATES TO LIGHT CONTROL, SPILL, LIGHT LEVELS, UNIFORMITY, EFFICIENCY, GLARE AND OTHER SUCH CHARACTERISTICS. CLEAN AND REMOVE ALL PAINT, STICKERS, DIRT, SMUDGES AND FINGERPRINTS FROM LIGHTING FIXTURES AFTER

PROVIDE BASIS OF DESIGN LIGHTING CONTROL SYSTEM SHOWN ON THE DRAWINGS. ANY PROPOSED ALTERNATIVE LIGHTING CONTROL SYSTEM SHALL BE EQUAL TO OR GREATER THAN THE BASIS OF DESIGN SYSTEM CONTROLLABILITY, FUNCTIONALITY, PROGRAMMABILITY AND REMOTE ACCESS.

PROVIDE ALL COMPONENTS AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM, INCLUDING CONTROL DEVICES. WIRING, SWITCHES, LINE VOLTAGE CONNECTIONS, 0-10V CONTROL WIRING AND OTHER SUCH ITEMS

PART 3 - EXECUTION

ALL WORK, MATERIALS AND MANNER OF INSTALLING SAME SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRIC CODE

ALL CONDUIT AND WIRING SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.

WIRING IN LINEINISHED AREAS INSIDE BUILDINGS SHALL BE INSTALLED EXPOSED USING EMT OR RGS CONDUIT

RACEWAYS

RACEWAYS, ENCLOSURES AND BOXES SHALL BE MECHANICALLY JOINED TO FORM A CONTINUOUS ELECTRICAL

THE CONTRACTOR SHALL PROVIDE APPROVED TYPE PULL BOXES AS REQUIRED

MINIMUM SIZE CONDUIT SHALL BE 1" UNLESS OTHERWISE NOTED

FURNISH NYLON PULL STRINGS IN ALL EMPTY CONDUIT RUNS.

FURNISH LOCKNUTS AND BUSHINGS FOR ALL CONDUIT TERMINATIONS IN ALL OUTLET BOXES, PANELS, PULL BOXES, CONDUIT STUBS, ETC.

ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED FOR CONCEALED AND EXPOSED WIRING IN DRY LOCATIONS

RIGID POLYVINYL CHLORIDE (PVC) SHALL BE USED FOR WIRING IN THE FOLLOWING LOCATIONS:

 BRANCH CIRCUIT WIRING INSIDE SERVICE ENCLOSURE RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE USED FOR WIRING IN THE FOLLOWING LOCATIONS:

2. EXPOSED TO MOISTURE, INCLUDING ALL EXTERIOR EXPOSED APPLICATIONS

3. UNDERGROUND TO ABOVE GROUND TRANSITIONS / SWEEPS

1. LIGHTING AND POWER BRANCH CIRCUIT WIRING BURIED UNDER GRADE

2. BELOW CONCRETE SLABS 3. UNDER PARKING LOTS AND AREAS SUBJECT TO VEHICULAR TRAVEL (SCHEDULE 80)

4. UNDER WALKWAYS AND GRASS AREAS (SCHEDULE 40)

ALLOWABLE UNBALANCE.

CONDUCTOR IDENTIFICATION

PROVIDE WIRING TO ALL OUTLETS, EQUIPMENT, APPARATUS AND OTHER SPECIALTIES UNDER THIS DIVISION THAT WHICH FURNISHED OR PROVIDED UNDER OTHER DIVISIONS OR BY THE OWNER.

THE TERM 'WIRING' SHALL BE CONSIDERED TO BE COMPRISED OF THE CONDUIT, CONDUCTORS, CONNECTIONS,

ALL WIRING ON DRAWINGS IS SIZED FOR TYPE THWN/THHN COPPER CONDUCTORS.

MINIMUM SIZE WIRE SHALL BE #12 UNLESS OTHERWISE INDICATED, ALL WIRING SHALL BE COLOR CODED. EXERCISE CAUTION IN PULLING CONDUCTORS INTO RACEWAYS SO AS NOT TO DAMAGE THE INSULATION. CABLE PULLING LUBRICANT SHALL BE USED TO ASSIST IN PULLING.

CONDUCTOR WITHIN PANEL BOARDS. JUNCTION BOXES. TROUGHS AND OTHER EQUIPMENT WHERE CONCENTRATIONS OF CONDUCTORS ARE ENCLOSED. SHALL BE NEATLY ARRANGED AND TIED WITH CABLE TIES CIRCUITS SHALL BE SO CONNECTED TO THE PANELBOARDS THAT THE TOTAL LOAD IS DISTRIBUTED AS NEATLY AS

POSSIBLE, EQUALLY BETWEEN EACH LINE AND NEUTRAL. 10% WILL BE CONSIDERED A REASONABLE AND

BRANCH CIRCUIT WIRING FOR SWITCHES, RECEPTACLES, DEVICES AND LIGHTING IN DRYWALL CONSTRUCTION AND ACCESSIBLE HUNG CEILING SPACE. MAY BE INSTALLED IN A METAL SHEATHED 'MC' TYPE CABLE WHERE PPROVED BY THE NEC AND THE AUTHORITY HAVING JURISDICTION. CABLE SHALL BE SUPPORTED FROM STRUCTURE 4" O.C. WITH APPROVED CABLE SUPPORTS. PROVIDE APPROPRIATE GROMMETS FOR HORIZONTAL RUNS IN METAL STUD PARTITIONS. CABLE SHALL NOT LAY ON CEILING STRUCTURE OR TILES. PROVIDE ANTI-SHORT BUSHINGS (RED HEAD) UNDER ARMOR JACKET AT TERMINATIONS

COMMON NEUTRAL FOR MULTIPLE BRANCH CIRCUITS IS NOT ACCEPTABLE. PROVIDE SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT

WIRING IN OUTLET BOXES, JUNCTION BOXES, CABINET PANELBOARDS OR EQUIPMENT SHALL HAVE A MINIMUM OF EIGHT (8") INCHES LENGTH LEADS FOR CONNECTING WIRING DEVICES TO MAKE UP CIRCUIT SPLICES.

INSTALL COPPER GREEN INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS AND RACEWAYS.

CURRENT-CARRYING CAPACITY NON-INSUALTED CONNECTORS SHALL BE WRAPPED WITH INSULATING TAPE TO THE THICKNESS OF THE INSULATION OF THE CONDUCTORS BEING SPLICED. ELECTRICAL TAPE SHALL BE 3M OR SUPER 88 SCOTCH VINYL FLAME-RETARDANT, COLD AND WEATHER RESISTANT SPLICES FOR CONDUCTORS, SIZES #10 AWG OR SMALLER SHALL BE MADE WITH U.L. LISTED SPRING-TYPE

SPLICING SHALL BE DONE WITH INSULATED OR NON-INSULATED CONNECTORS OF APPROPRIATE TYPES AND

SPLICES, TAPS AND TERMINALS FOR CONDUCTORS #8 AWG OR LARGER SHALL BE MADE WITH U.L. LISTED BOLTED PRESSURE CONNECTORS OF BRONZE OR COPPER CONSTRUCTION, OF APPROPRIATE CURRENT CARRYING CAPACITY. EQUAL TO O/Z GEDENY, BURNDY OR BLACKBURN.

CONDUCTORS #8 AWG AND SMALLER SHALL HAVE A COLOR-CODED INSULATION. CONDUCTORS #6 AWG AND LARGER SHALL BE IDENTIFIED WITH TAPES APPLIED NEAR THE ENDS OF THE

CONNECTORS OR APPROPRIATE CURRENT CARRYING CAPACITY

FEEDERS AND BRANCH CIRCUIT CONDUCTORS SHALL BE IDENTIFIED FOR PHASE ROTATION UTILIZE INDUSTRY STANDARD COLORS FOR CONDUCTORS.

IN ALL PANELS, MOTOR CONTROLS, JUNCTION BOXES, OUTLET BOXES AND DEVICE BOXES.

FURNISH AND INSTALL NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT, IDENTIFYING ITEMS BY NAME, FUNCTION IDENTIFYING NAMEPLATES SHALL BE LAMINATED. PLASTIC TYPE. CONSISTING OF TWO BLACK PLASTIC SHEFTS WITH ONE WHITE PLASTIC SHEET BONDED TO AND BETWEEN THE TWO OUTER BLACK SHEETS AND HAVING THE LETTERS ENGRAVED IN ONE BLACK TO THE DEPTH OF THE WHITE PLASTIC. FASTEN NAMEPLATES TO EQUIPMENT

ALL FEEDERS, MAINS AND BRANCH CIRCUIT CONDUCTORS SHALL BE TAGGED AT BOTH ENDS WITH WIRE MARKERS

WITH SUITABLE ADHESIVES OR STAINLESS STEEL SCREWS. ALL PANELS SHALL HAVE TYPEWRITTEN CIRCUIT DIRECTORIES IDENTIFYING ALL BRANCH CIRCUITS. PROVIDE

ADDITIONAL COPY OF COMPLETE UPDATED PANEL DIRECTORY TO FACILITY ENGINEERING.

USE PLASTIC-COATED WIRE MARKERS OF THE SELF-ADHESIVE. WRAPAROUND TYPE WITH PERMANENT FACTORY-PRINTED NUMBER, LETTERS AND SYMBOLS.

ALL CONDUCTORS SHALL BE PERMANENTLY TAGGED AT TIME OF INSTALLATION. LABELS SHALL BE EQUAL TO T&B, PANDUIT OR IDEAL.

WIRE MARKERS SHALL BE SECURELY ATTACHED AT BOTH ENDS, IDENTIFYING PANEL AND CIRCUIT BREAKER

ALL ELECTRICAL WORK SHALL BE GROUNDED AND BONDED IN FULL CONFORMANCE WITH THE LATEST APPROVED

EDITION OF THE NATIONAL ELECTRICAL CODE AND LOCAL REQUIREMENTS. ALL ELECTRICAL FOLIPMENT TRANSFORMERS PANELBOARD ENCLOSURES MOTOR FRAMES SAFETY SWITCHES METAL ENCLOSURES, ELECTRICAL DEVICE CLOSURES AND ALL OTHER EQUIPMENT SHALL BE MADE TO FORM A CONTINUOUS CONDUCTING, GROUND PATH OF LOW IMPEDANCE FOR GROUND FAULT CIRCUITS AND OPERATION

PROVIDE GROUNDING CONDUCTOR IN ALL RACEWAYS U.O.N..

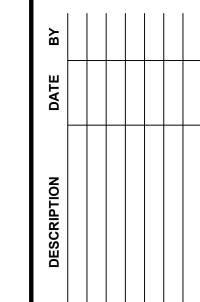
OF THE CIRCUIT PROTECTIVE DEVICES WITHIN EACH CIRCUIT.

GROUND CONNECTIONS WITH THE GROUNDING CONDUCTORS SHALL BE MADE AT EACH OUTLET BOX, LIGHTING FIXTURE, MOTOR AND OTHER EQUIPMENT COMPONENTS BY MEANS OF A POSITIVELY SECURED GROUNDING CLAMP, SCREW OR CLIP, CONNECTIONS TO GROUNDING RODS, OTHER GROUNDING ELECTRODE CONDUCTORS SHALL BE MADE WITH CADWELL TYPE. EXOTHEMIC WELD PROCESS UNLESS OTHERWISE NOTED. CONNECTIONS TO PIPES SHALL BE MADE WITH APPROVED BRONZE OR BRASS CLAMPS.

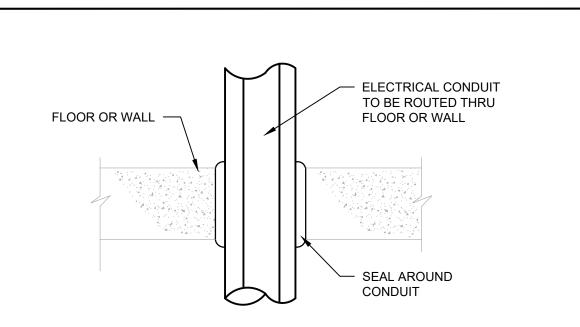
BONDING SHALL BE PROVIDED TO ASSURE ELECTRICAL CONTINUITY AND THE CAPACITY TO SAFELY CONDUCT ANY FAULT CURRENT LIKELY TO BE IMPOSED ALL DEVICES (SWITCHES, RECEPTACLES, ETC.), SHALL BE GROUNDED TO CONDUIT SYSTEM WITH SIX (6") INCH SOLID COPPER #12 AWG INSULATED WIRE (GREEN) CONNECTED TO GROUND SCREW IN DEVICE AND FASTENED

TO BACKBOX WITH 10-32x3/8" SLOTTED HEXAGON HEAD WASHER FACE GROUND WITH GREEN DYE FINISH.

END OF ELECTRICAL SPECIFICATIONS

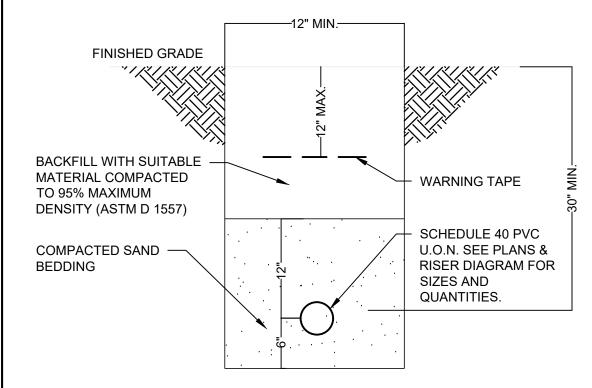


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NON-FIRE RATED CONDUIT PENETRATION THROUGH FLOOR OR WALL DETAIL

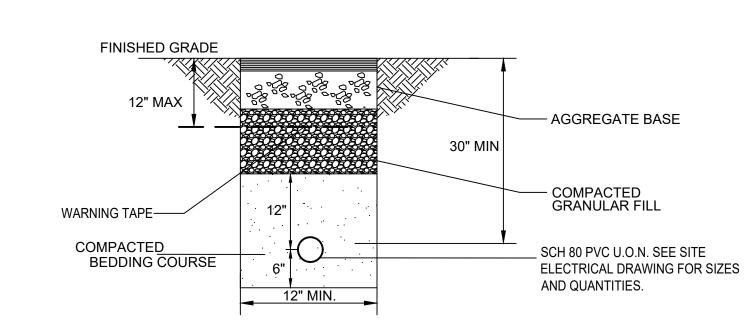
NOT TO SCALE



- 1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES. CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION. THE TRENCH SHALL BE BACKFILLED IMMEDIATELY FOLLOWING PLACEMENT OF OTHER CONDUITS.
- WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES 3. MAINTAIN 12" SEPARATION FROM OTHER UTILITIES (E.G. WATER, COMMUNICATIONS, SANITARY, ETC.)

CONDUIT INSTALLATION IN GRASS

ES-1 NTS

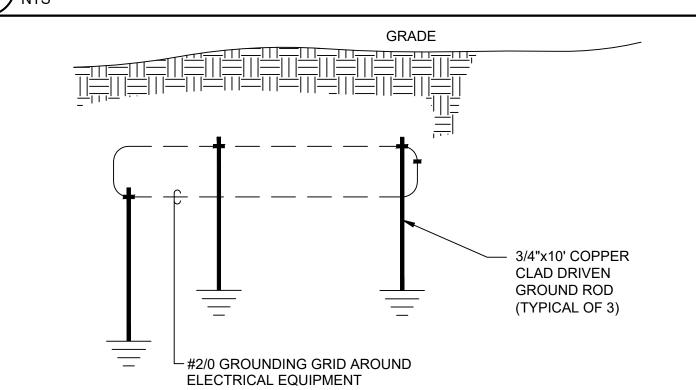


NOTES:

UTILITIES.

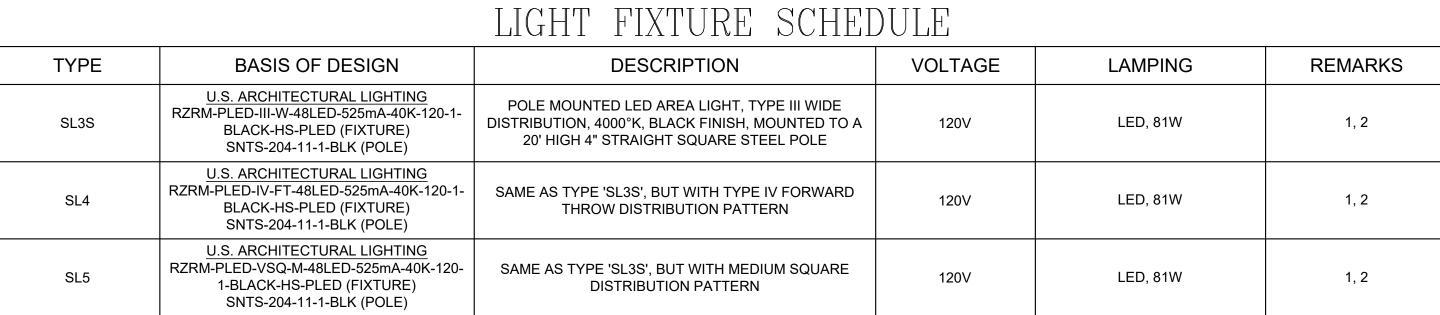
- 1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION. THE TRENCH SHALL BE BACKFILLED IMMEDIATELY FOLLOWING PLACEMENT OF THE CONDUITS.
- 2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING
- 3. MAINTAIN 12" SEPARATION FROM OTHER UTILITIES (E.G. WATER, COMMUNICATIONS, SANITARY, ETC.)

CONDUIT INSTALLATION IN BITUMINOUS ES-1 NTS

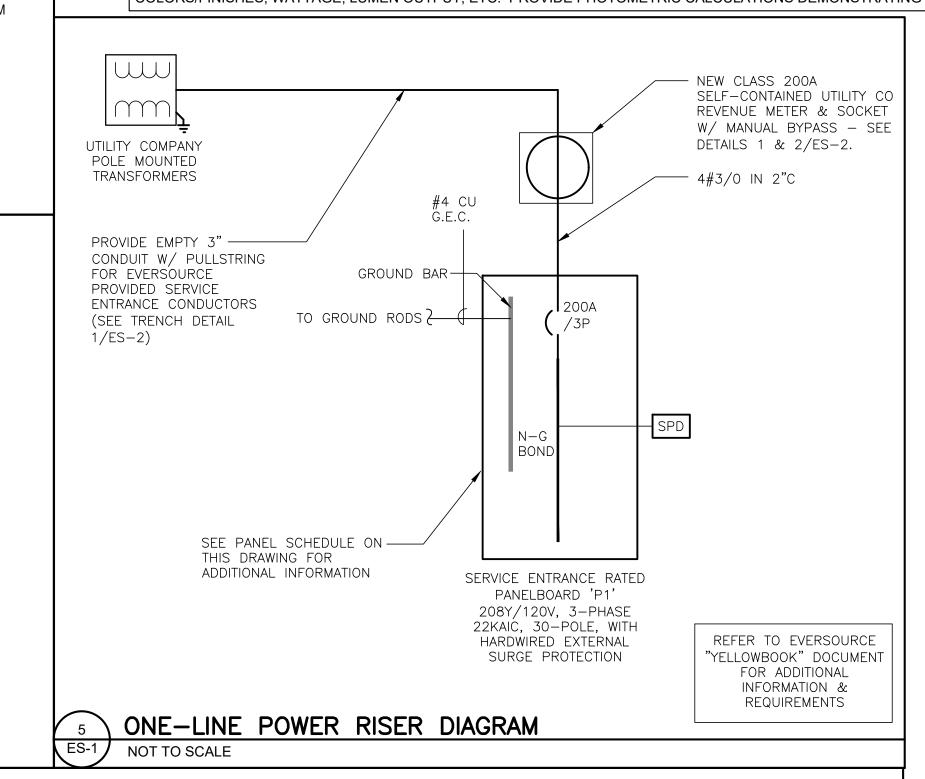


- ALL ASPECTS OF GROUNDING SYSTEM SHALL COMPLY FULLY WITH ARTICLE 250 OF N.E.C. 2. UTILIZE GROUNDING BUSHINGS AS REQUIRED.
- PROVIDE AT PAD MOUNTED ENCLOSURE & CONNECT TO SERVICE GROUND BAR.
- 4. GROUND RODS SHALL BE 6'-0" APART.

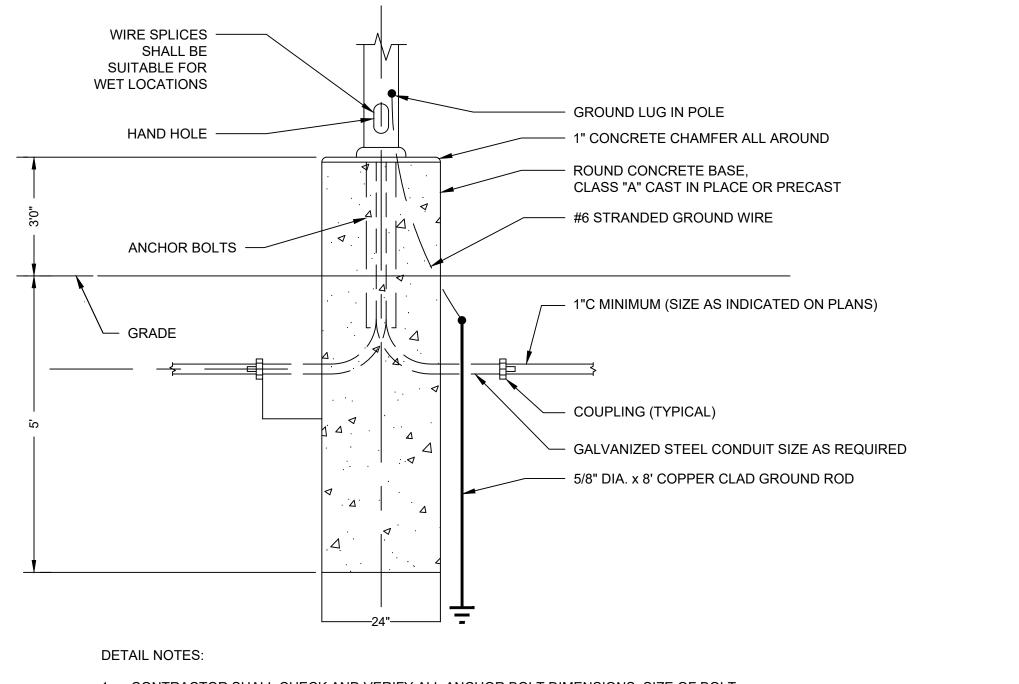
GROUND RODS / RING DETAIL



. PROVIDE ALL NECESSARY MOUNTING HARDWARE, BRACKETS, ETC. 2. PROVIDE PRODUCTS AS SPECIFIED. ANY PROPOSED ALTERNATIVE FIXTURES MUST BE EQUAL TO OR BETTER THAN BASIS OF DESIGN AS IT RELATES TO MATERIAL/CONSTRUCTION, EFFICIENCY, COLORS/FINISHES, WATTAGE, LUMEN OUTPUT, ETC. PROVIDE PHOTOMETRIC CALCULATIONS DEMONSTRATING EQUAL PERFORMANCE.



MANUFACTURER: T.B.D. (NEW MLO OR MCB: MCB PANEL: PANEL P1 TYPE: PANEL FEED: SEE RISER VOLTAGE: 208Y/120V, 3-PHASE MOUNTING: SURFACE CU OR AL WIRE: CU MAIN AMPS: 200A MCB LOCATION: SEE PLANS AIC RATING: 22 KAIC FEEDER: SEE RISER BREAKER OPTIONS: KVA KVA LOAD LOAD BRKR SPARE SPARE RECEPTACLE IN ENCLOSU ENCLOSURE HEATER OREBOARD #1 RECEPTACLES (SOUTH OREBOARD #2 PARKING LOT LIGHTING 0.40 RECEPTACLES (NORTH) MPTY SPACE / PROVISIONS SURGE PROTECTIVE DEVICE MPTY SPACE / PROVISIONS 29 EMPTY SPACE / PROVISIONS



- 1. CONTRACTOR SHALL CHECK AND VERIFY ALL ANCHOR BOLT DIMENSIONS, SIZE OF BOLT CIRCLE, ETC. WITH THE POLE MANUFACTURER PRIOR TO INSTALLATION OF THE POLE
- 2. CHAMFER ALL EXPOSED EDGES OF THE POLE BASES.
- 3. PROVIDE INSULATED GROUNDING BUSHING ON EXPOSED END OF ALL GALVANIZED STEEL BENDS IN BASE OF POLE.
- 4. BASE SHALL BE CAST IN PLACE OR PRECAST.

PARKING LOT LIGHT POLE FOUNDATION DETAIL

ES-1 NTS

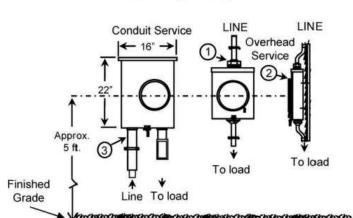
DETAILS & SCHEDULE ELECTRICAL NORHT END FIELD BALLFIELD RECONS

SG SG **AS NOTED AUGUST 29, 2022** 14792.00004 -- OF --

ES-1

MAIN SERVICE PANEL 'P1' SCHEDULE

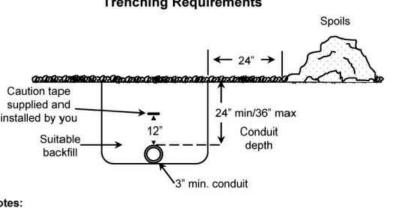
Self-Contained Meter Socket Sequence and **Mounting Arrangement**



- Weatherproof joint with removable or non-removable hub.
- 2. Socket shall be mounted plumb. On clapboard shingle siding, socket shall be located on the high point of two clapboards. 3. Slip joint for conduit service shall be installed on left side of meter socket only.

- A. All network and 480Y/277 volt services will require a main disconnect ahead of the meter (cold sequence).
- B. Self-contained meter sockets are required for: Single-phase 120/240 volt, 400 amp service entrance capacity Single-phase 120/208 volt, 400 amp service entrance capacity
- Three-phase 400 amp service entrance capacity or less. C. All equipment (except meter) furnished, installed, owned and
- maintained by you.
- D. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket. For Cold Sequenced service see p 39 Section 8.E.1a,

FIGURE 9 **Trenching Requirements**



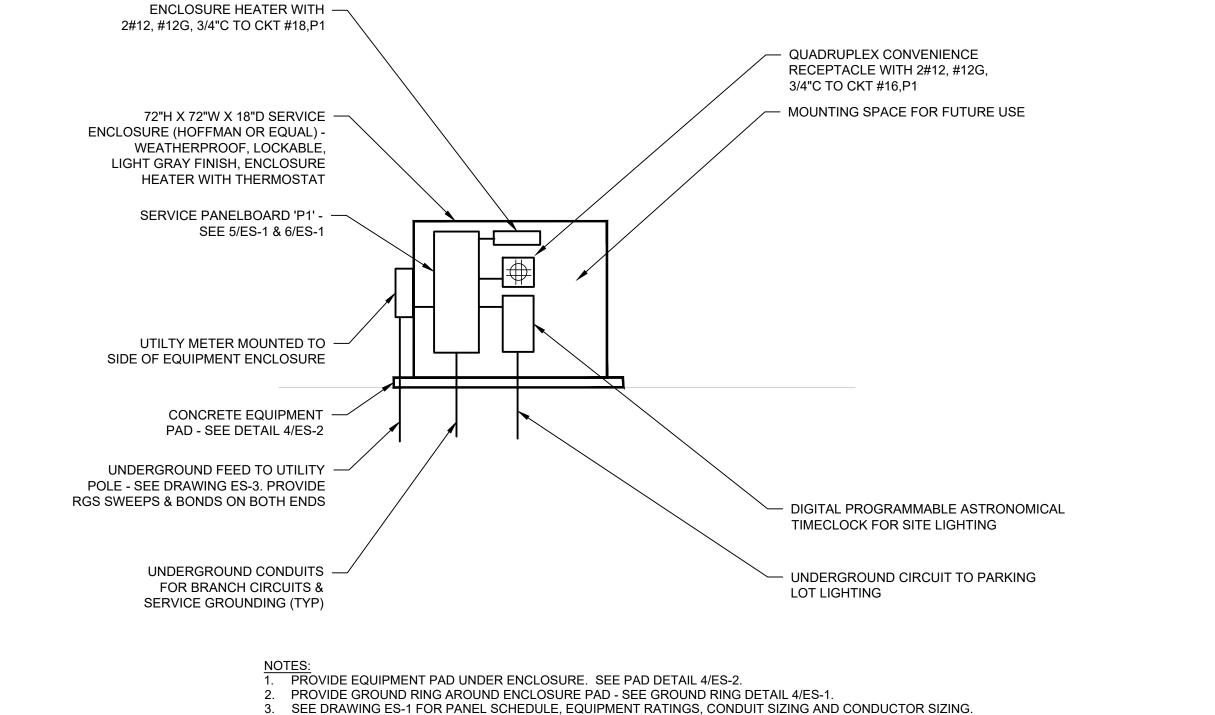
- OSHA standards require that spoils shall be placed 24" from edge of
- Suitable backfill shall not contain ash, cinder, shell, frozen material,
- loose debris or stones larger than 2" max. dimension. All Electrical grade Schedule 40 PVC conduit will be listed and labeled for Direct Buried and above ground use.
- Horizontal Clearance shall be 12 inches minimum or more as necessary to permit access for maintenance of all facilities without damage to the others. This includes private wiring. Fuel (Gas and Oil) and Water Lines shall be no closer than 18 inches in all
- Vertical Crossing Clearance shall be so constructed and supported that upper facility will not transfer harmful load onto any lower facility. There shall be adequate vertical clearance to permit access for maintenance of all facilities without damage to the others. In general, 12 inches is considered adequate separation, but the parties involved may agree to a lesser separation. Fuel (Gas and Oil) and Water Lines shall be no closer than 18 inches in all directions.
- You will provide and install the caution tape which meets the requirements of Section 16-345-3 of the Regulations of Connecticut State Agencies. The tape shall be red polyethylene, 6" wide X 4 mils thick with black lettering of a minimum letter size of 120 Helvetica Light. It shall contain the following continuous printed warning: "Caution - Electric Line Buried Below"
- Metallic Foil tape is NOT acceptable. All conduit shall be inspected by the local municipal authority prior to backfilling.

FIGURE 21 Three -Phase: Self-Contained Metering Connections 208Y/120v or 480Y/277V Three-phase, 4-wire 7 terminal meter socket 400 amp or less

1. An approved lever operated manual bypass with jaw release and flash

- A. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket.
- B. All three phase network and 480Y/277 volt services will require a main disconnect with over current pretection ahead of the meter (Cold

2 EVERSOURCE SELF-CONTAINED METER DETAIL



4. CONDUIT SWEEPS SHALL BE RIGID GALVANIZED STEEL.

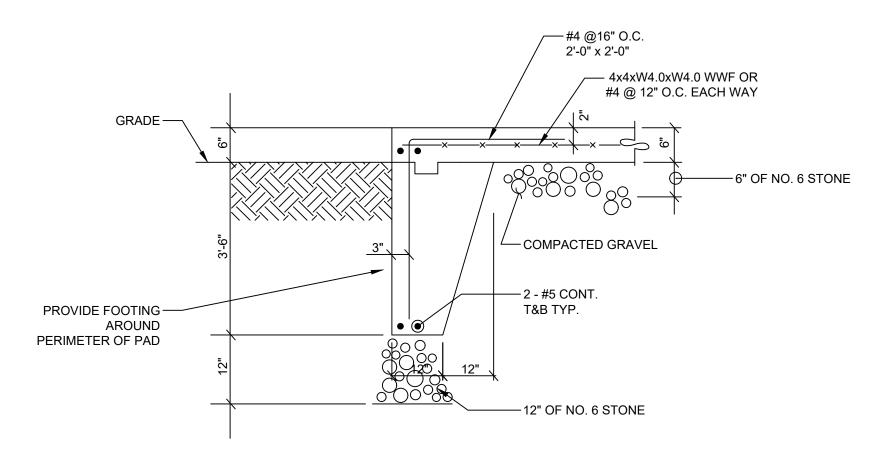
PAD MOUNTED ENCLOSURE DETAILS

EVERSOURCE TRENCH & METER DETAILS



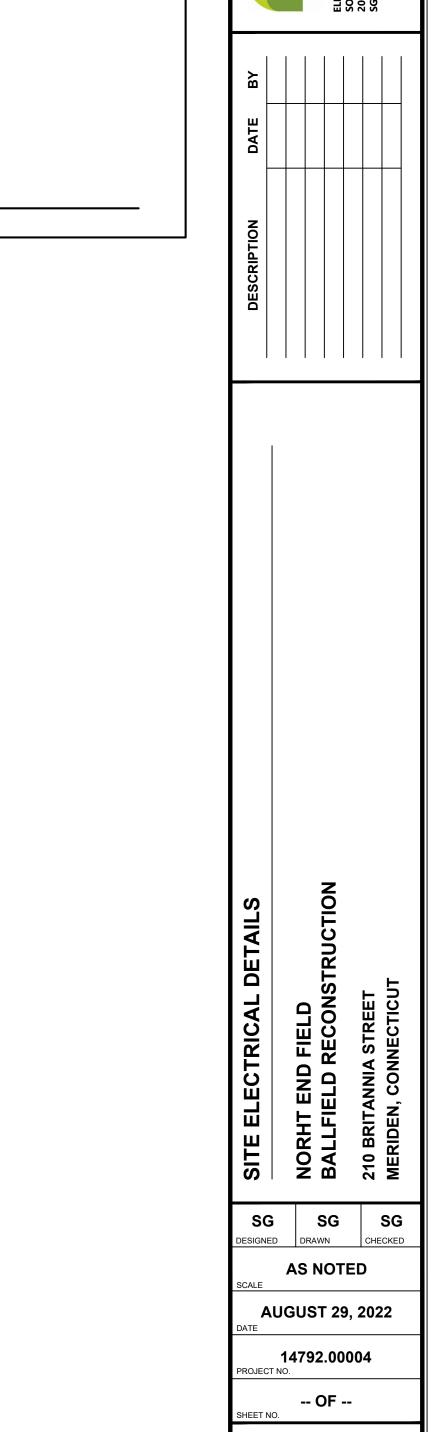
ENCLOSURE -- CONTRACTOR TO COORDINATE CONDUIT ENTRY WITH SHOP DRAWING -PAD SHALL BE SIZED 12" LARGER THAN OVERALL DIMENSIONS OF PAD SHALL BE SIZED 12" ------**EQUIPMENT PAD PLAN EQUIPMENT** LARGER THAN OVER ALL

DIMENSIONS OF SEE SITE PLAN FOR LOCATION SCALE N.T.S



- 1. 4,000 PSI CONCRETE WITH 6% AIR ENTRAINMENT
- 2. ASTM A-615, 60,000 PSI REINFORCING STEEL 3. ASTM A-185 WELDED WIRE FABRIC
- 4. PROVIDE A SMOOTH BROOM FINISH
- 5. PROVIDE #2/0 FROM UNCOATED REBAR TO GROUND RING ON OPPOSITE CORNERS OF THE EQUIPMENT PAD SEE DETAIL 4/ES-1 FOR GROUND RING DETAIL.

EQUIPMENT PAD DETAIL



ES-2

