GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATION CONDITIONS IN THE FIELD BEFORE COMMENCING WORK AND SHALL NOTIFY OWNER'S REPRESENTATIVE OF DISCREPANCIES BEFORE BEGINNING WORK.
2. ALL WORK SHALL COMPLY WITH RULES AND REGULATIONS OF ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND FAMILIARIZING HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID.
4. SAFE WORKING CONDITIONS AND ALL SAFETY REQUIREMENT ESTABLISHED BY JURISDICTIONAL AGENCIES AND/OR THE OWNER SHALL BE STRINGENT OBSERVED. WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENTS SHALL APPLY. CARE SHALL BE EXERCISED TO AVOID ENDANGERING PERSONNEL OR THE STRUCTURE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PERFORMANCE OF THE CONTRACT.
6. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OWNER SO THAT THERE IS NO INTERFERENCE WITH OWNER'S PERSONNEL OR WORK SCHEDULE.
7. CONTRACTOR SHALL FURNISH ALL SCAFFOLDING, HOISTING EQUIPMENT AND ANY OTHER EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER.
8. THE CONTRACTOR SHALL BE AWARE THAT UNDERGROUND UTILITIES DO EXIST. CONTRACTOR TO PROCEED WITH EXCAVATION CAREFULLY AND INFORM THE OWNER IF ANY UTILITIES ARE ENCOUNTERED.
9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SUFFICIENTLY IN ADVANCE OF THE WORK TO ALLOW PROPER TIME FOR REVIEW. MATERIALS SHALL NOT BE FABRICATED OR DELIVERED TO THE SITE BEFORE THE SHOP DRAWINGS HAVE BEEN REVIEWED.
10. DAMAGE CAUSED DURING OR RESULTING FROM NEW CONSTRUCTION OPERATIONS SHALL BE REPLACED AT NO COST TO THE OWNER.
11. CONTRACTOR SHALL REPLACE ALL EXISTING CONSTRUCTION BEING REMOVED FOR CONSTRUCTION PURPOSES. THE REPLACED CONSTRUCTION SHALL MATCH EXISTING CONSTRUCTION.
12. CONTRACTOR SHALL PROVIDE ALL ENGINEERING, MATERIALS, FABRICATION, LABOR AND SUPERVISION, ERECTION EQUIPMENT AND APPLIANCES REQUIRED TO COMPLETE THE WORK.
13. THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
14. CONTRACTOR SHALL REMOVE ALL DEBRIS FROM SITE AND HE SHALL LEAVE THE WORK AREA BROOM-CLEAN ON A DAILY BASIS.
15. CONTRACTOR TO RETAIN A LICENSED SURVEYOR TO ESTABLISH FINISHED FLOOR ELEVATION FOR ALL NEW WORK.

STRUCTURAL DESIGN CRITERIA:

A. CODES:
   1. INTERNATIONAL BUILDING CODE 2015 NEW JERSEY EDITION.
   2. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER CONSTRUCTION ANSI/ASCE 7-10.
   3. MANUAL OF STEEL CONSTRUCTION: ALLOWABLE STRESS DESIGN OR LOAD AND RESISTANCE FACTOR DESIGN BY AISC.
   4. BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE AND COMMENTARY. ACI-318.

B. DESIGN LOADS:
   1. DEAD LOADS: SECTION 1606.IBC 2015
      a. TABLE C3-1; ASCE 7-10.
   2. LIVE LOADS: SECTION 1607. IBC 2015
      a. TABLE 1607.1; IBC 2015
      b. TABLE C4-1; ASCE 7-10.
   3. SNOW LOADS: SECTION 1608. IBC 2015
      a. GROUND SNOW LOAD, Pg = 30 PSF
      b. SNOW EXPOSURE FACTOR, Ce = 1.20
      c. BUILDING CATEGORY = III & IMPORTANCE FACTOR Is = 1.1
      d. THERMAL FACTOR, Ct = 1.0
      e. FLAT ROOF SNOW LOAD, Pf = 25 PSF+SNOW DRIFT OR Pf MIN. = 30 PSF
   4. WIND LOADS: SECTION 1609.
      a. BASIC WIND SPEED (3-SEC GUST) V3s = 120 MPH
      b. EQUIVALENT FASTEST MILE WIND VELOCITY = V fm = 120 MPH
      c. BUILDING CATEGORY = III
      d. EXPOSURE CATEGORY = C
      e. MAIN WIND FORCE RESISTING SYSTEM :
      f. COMPONENT AND CLADDING : FIGURE 6-3, ASCE 7-10.
   5. SEISMIC LOADS: SECTION 1613. IBC 2015
      a. SEISMIC ACCELERATION FACTORS: FIGURE 1613.5 (1) AND 1613.5 (2). Ss = 0.26g S1 = 0.0689g
      b. SITE CLASS = B
      c. SPECTRUM RESPONSE COEFFICIENT: Sds = 0.171g ; Sd1 = 0.046g
      d. BUILDING CATEGORY OR USE GROUP = III ; IMPORTANCE FACTOR IE=1.25
      e. SEISMIC DESIGN CATEGORY = B; TABLE 1613.5.6 (1)
      f. BASIC SEISMIC-FORCE-MASONRY SHEAR WALL INTERMEDIATE REINFORCED
      g. DESIGN BASE SHEAR = V = CsxW = 0.0488W

EARTH WORK AND FOUNDATION

1. FOUNDATION SHALL BE DESIGNED FOR A NET SOIL BEARING CAPACITY OF EIGHT THOUSAND (8,000) POUNDS PER SQUARE FOOT FOUNDED ON WEATHERED SHALE PER SOR CONSULTING DATED 08/27/2019 FOR SUBSURFACE CONDITIONS AND CONSTRUCTION PROCEDURES. SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SOILS ENGINEER PAID FOR BY THE CONTRACTOR PRIOR TO PLACING OF CONCRETE. IF REQUIRED BY THE SOILS ENGINEER, LOWER BOTTOM OF FOOTINGS TO THE DEPTH THAT SATISFIES DESIGN SOIL BEARING CAPACITY. NOTIFY THE ENGINEER OF RECORD.
2. THE CONTRACTOR SHALL PERFORM ALL THE EARTH WORK OPERATIONS NECESSARY FOR THE PERFORMANCE OF THE CONTRACT AS NOTED IN THE GEOTECHNICAL REPORT. IT SHALL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:
   a) CLEAR THE SITE, STRIP AND REMOVE ALL VEGETATIONS, TREES, STUMPS, TOP SOIL AND UNSUITABLE MATERIAL TO A DEPTH OF ONE (1) FEET ATLEAST FIVE (5) FEET BEYOND THE LIMIT OF THE PROPOSED BUILDING.
   b) SOME PORTION OF THE BUILDING CONTAIN ORGANIC AND UNSUITABLE MATERIAL SPECIALLY NORTH EAST SECTION AS NOTED IN BORING 4 & 5 REQUIRING REMOVAL OF UNSUITABLE MATERIAL TO A DEPTH OF 5 TO 10 FT. THE AREAS & LIMIT OF EXCAVATION SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER.
   c) AFTER REMOVAL OF UNSUITABLE MATERIAL, PROJECT SITE SHALL BE LEVELLED AND THOROUGHLY PROOF ROLLED AND COMPACTED.
   d) EXCAVATION FOR FOUNDATIONS, SUBBASE AND SLAB.
   e) COMPACTION OF SUBGRADE, FILL AND BACKFILL MATERIALS TO 95% OF MAXIMUM DENSITY AS PER ASTM D-1557.
   f) PROVIDE SUITABLE GRANULAR FILL AND BACKFILLING IMPORTED MATERIAL PER GEOTECHNICAL REPORT & TO BE VERIFIED BY THE SOILS ENGINEER.
   g) SHORING AND SHEETING AS REQUIRED TO SUPPORT EXCAVATION.
   h) PUMPING AND BAILING AS NECESSARY.
   j) PROTECTION AROUND EXCAVATIONS AND UNDERGROUND UTILITIES IF ANY.
3. THE CONTRACTOR SHALL MAINTAIN AND OPERATE PROPER PUMPS OR OTHER EQUIPMENT AS REQUIRED TO KEEP EXCAVATION DRY DURING CONSTRUCTION.
4. ALL FILL AND BACKFILL SHALL BE CLEAN AND WELL GRADED GRANULAR EXCAVATED ON SITE MATERIAL APPROVED BY THE SOILS ENGINEER AND COMPACTED IN MAXIMUM TWELVE (10) INCH LOOSE LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE AS MEASURED BY MODIFIED PROCTOR DENSITY TEST ASTM D-1557. LIFT THICKNESS, OPTIMUM MOISTURE AND COMPACTION EQUIPMENT SHALL BE AS PER SOILS ENGINEER'S REQUIREMENTS.
5. ALL SURPLUS EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR.
6. CONTRACTOR SHALL ARRANGE FOR DEWATERING SO THAT THERE IS NO ACCUMULATED WATER AT THE EXCAVATION BEFORE POURING NEW FOUNDATION.
7. PROVIDE STAKING AND SURVEYING AS REQUIRED.
8. CONTRACTOR SHALL THOROUGHLY REVIEW GEOTECHNICAL REPORT FOR ALL EARTH WORK
9. IN AREAS WHERE FOUNDATION WILL BE OVER EXCAVATED DUE TO PRESENCE OF UNSUITABLE MATERIAL, THEY SHALL BE BACKFILLED WITH CONTROLLED FILL AS NOTED IN THE GEOTECHNICAL REPORT OR WITH STONES/GRANULATED MATERIAL / LEAN CONCRETE IN COMPACTED LAYERS TO ENSURE THAT THE REQUIRED BEARING CAPACITY SHALL BE ATTAINED. THE SOILS CONSULTANT NEEDS TO INSPECT AND VERIFY ALL FOUNDATION EXCAVATION TO CONFIRM THE BEARING CAPACITY.

EXTERIOR MASONRY WALL NOTES:-

1. PROVIDE ALL MATERIALS, LABOR, SUPERVISION, EQUIPMENT AND APPLIANCES REQUIRED TO COMPLETE THIS PROJECT.
2. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATION FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6/TMS 602)", PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE, DETROIT, MICHIGAN.
3. HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING ASTM C-90 LATEST EDITION GRADE N TYPE I . COLOR AND TEXTURE AS SELECTED BY OWNER'S REPRESENTATIVE. ALL CONCRETE MASONRY UNITS SHALL BE FROM THE SAME PRODUCTION RUN. f'm = 1,500 psi. (MIN. NET AREA COMPRESSIVE STRENGTH OF UNIT = 1,900 psi.)
4. ALL BLOCKS EXCEPT BOND BEAMS SHALL BE 8" OR 12" THICK STANDARD WEIGHT HOLLOW CORE BLOCKS.
5. CONCRETE MASONRY SHALL BE LAID IN RUNNING BOND U.O.N.
6. MORTAR SHALL CONFORM TO ASTM C-270 TYPE M (2500 PSI) OR S (1800 PSI)
7. GROUT FOR CONCRETE MASONRY SHALL CONFORM TO ASTM C-476, TYPE COARSE GROUT AND MINIMUM 3,000 PSI COMPRESSIVE STRENGTH @ 28 DAYS.
8. HORIZONTAL WALL REINFORCEMENT SHALL BE STANDARD TYPE "DUR-O-WALL OR "BLOCK-TRUSS", "BLOCK MESH" OR APPROVED EQUAL. TRUSS MASONRY REINFORCEMENT CONFORMING WITH REQUIREMENTS OF ASTM A 82 FOR COLD DRAWN STEEL WIRE FOR CONCRETE REINFORCEMENT. PROVIDE PREFABRICATED WELDED CORNERS AND INTERSECTIONS. ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED WITH 9 GAGE SIDE RODS AND 9 GAGE CROSS BARS. CONFORMING TO ASTM A 153 CLASS B-2.
9. VERTICAL REINFORCEMENT SHALL BE DEFORMED STEEL CONFORMING TO ASTM A-615, GRADE 60 AND SIZES AS SHOWN ON DRAWING.
10. SUBMIT TEST REPORT AND CERTIFICATE OF CONFORMANCE DOCUMENT FOR EACH TYPE AND COLOR OF BLOCK, MORTAR SPECIFIED FOR OWNER'S REPRESENTATIVE APPROVAL. ALL TESTS SHALL BE PERFORMED BY AN INDEPENDENT CERTIFIED TESTING LABORATORY, IN ACCORDANCE WITH ASTM C-67 LATEST EDITION.
11. ADMIXTURES: "OMICRON" AS MANUFACTURED BY MASTER BUILDERS. COMPARABLE PRODUCTS OF A.C. HORN AND SONNEBORN ARE ACCEPTABLE SUBJECT OWNER'S REPRESENTATIVE'S APPROVAL.
12. PROVIDE STANDARD TYPE "DUR-O-WAL" OR APPROVED EQUAL. HORIZONTAL WALL REINFORCEMENT, INSTALL WALL REINFORCEMENT CONTINUOUSLY IN FIRST AND SECOND BED JOINTS (8" O.C.) AND IN EVERY SECOND BED JOINT (16" O.C.) THERE AFTER.
13. ALL MASONRY SHALL BE LAID PLUMB IN ACCORDANCE WITH TOLERANCES RECOMMENDED BY THE NATIONAL CONCRETE MASONRY ASSOCIATION.

CAST IN PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318) LATEST EDITION AND ALL SPECIFICATIONS CONTAINED THEREIN. ALSO COMPLY WITH THE FOLLOWING ACI PUBLICATIONS: ACI-301, ACI-302, ACI-304, ACI-305, ACI-306, ACI-308, ACI-309, ACI-315, ACI-347, AND ACI-211.1.
2. MATERIALS SHALL CONFORM TO THE FOLLOWING AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS:

CEMENT, TYPE I	C150
AGGREGATES	C33
REINFORCEMENT	A615, GRADE 60
ADMIXTURES (EXCEPT AIR)	C494
CURING & HARDENING COMPOUND	C309
READY MIX CONCRETE	C94
WELDED WIRE MESH	A185

3. THE COMPRESSIVE STRENGTH OF THE CONCRETE FOR EACH PORTION OF THE STRUCTURE SHALL BE AS DESIGNATED BELOW. STRENGTH REQUIREMENTS SHALL BE BASED ON 28-DAY TESTS.
   a) FOOTINGS:
      (1) NORMAL WEIGHT CONCRETE.
      (2) STRENGTH: 3500 PSI AT 28 DAYS.
      (3) AIR CONTENTS: 4.5% TO 7.5%
      (4) SLUMP: 4" MAXIMUM (AT POINT OF DEPOSIT IF PUMPED).
      (5) ADMIXTURES: WATER REDUCING AGENT, (EUCON WR-75).
      (6) W/C RATIO: 0.50 MAXIMUM BY WEIGHT. MINIMUM 5.5 CEMENT BAGS PER CUBIC YARD.
   b) SLAB/WALLS:
      (1) NORMAL WEIGHT CONCRETE.
      (2) STRENGTH: 4000 PSI AT 28 DAYS.
      (3) AIR CONTENTS: 4.5% TO 7.5% (3% MAX. FOR INTERIOR SLAB)
      (4) SLUMP: 8" MAXIMUM (AT POINT OF DEPOSIT IF PUMPED).
      (5) ADDITIVES: HIGH RANGE WATER REDUCING AGENT, (EUCON 37).
      (6) W/C RATIO: 0.46 MAXIMUM BY WEIGHT. MINIMUM 6.0 CEMENT BAGS PER CUBIC YARD.
   c) A DESIGN MIX SHALL BE, PROPORTIONED IN ACCORDANCE WITH SECTION 5.3 (FIELD EXPERIENCE AND/OR TRIAL MIXTURES) OF ACI-318; SUBMITTED FOR OWNER'S REVIEW PRIOR TO PLACING ANY CONCRETE.
4. CONCRETE SHALL BE PLACED AS NEARLY AS PRACTICABLE IN ITS FINAL POSITION AND CONSOLIDATED BY RODDING, SPADING OR INTERNAL TYPE OF MECHANICAL VIBRATORS. VIBRATORS SHALL NOT BE USED TO MOVE CONCRETE LATERALLY.
5. ALL INSERTS, ANCHOR BOLTS, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO PLACING CONCRETE.
6. ALL GROUT SHALL BE NON-SHRINK GROUT BY EUCLID CHEMICAL COMPANY OR APPROVED EQUAL.
7. CONCRETE ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.
8. ALL REINFORCEMENT INCLUDING WWF SHALL BE PROPERLY SUPPORTED ON METAL CHAIRS AND TIED AS REQUIRED.
9. CONCRETE PROTECTION FOR REINFORCEMENT (PER SECTION 7.7 OF ACI-318)

CONCRETE CAST AGAINST EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	
#6 BAR AND LARGER	2"
#5 BAR AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
SLABS, WALLS: #11 BAR AND SMALLER	3/4"
BEAMS, COLUMNS: PRIMARY REINFORCEMENT	2"

10. a) UNLESS NOTED ALL UNFORMED CONCRETE SURFACES SHALL BE CURED WITH VOLATILE ORGANIC COMPOUND (VOC) COMPLIANT CURING AND SEALING COMPOUND APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. USE SUPER DIAMOND CLEAR VOX BY EUCLID CHEMICAL COMPANY, MINIMUM 30% SOLIDS, OR APPROVED EQUAL.
11. ALL SLABS SHALL RECEIVE A TROWEL FINISH.
12. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 3/4" CHAMFER.
13. FINISHING FORMED SURFACES:-
   a) CONCRETE SURFACES NOT EXPOSED TO PUBLIC VIEW:- PROVIDE ROUGH-FORMED FINISH:- AS CAST CONCRETE TEXTURE IMPARTED BY FORM-FACING MATERIAL WITH TIE HOLES AND DEFECTS REPAIRED AND PATCHED. REMOVE FINS AND OTHER PROJECTIONS THAT EXCEED SPECIFIED LIMITS ON FORMED-SURFACE IRREGULARITIES.
   b) CONCRETE SURFACES EXPOSED TO PUBLIC VIEW:- PROVIDE SMOOTH-FORMED FINISH:- AS CAST CONCRETE TEXTURE IMPARTED BY FORM-FACING MATERIAL, ARRANGED IN AN ORDERLY AND SYMMETRICAL MANNER WITH A MINIMUM OF SEAMS. REPAIR AND PATCH TIE HOLES AND DEFECTS. REMOVE FINS AND OTHER PROJECTIONS THAT EXCEED SPECIFIED LIMITS ON FORMED-SURFACE IRREGULARITIES.
14. CONCRETE TESTING SHALL BE MADE BY AN INDEPENDENT LABORATORY RETAINED BY THE OWNER. A SET OF FOUR CYLINDERS TESTED AT 7 DAYS (2) AND 28 DAYS (2) IN ACCORDANCE WITH ASTM C39 SHALL BE DOCUMENTED FOR EACH DAYS POUR. SUBMIT RESULTS IN A REPORT FORM FOR THE OWNER'S REVIEW.
15. UPON COMPLETION OF THE WORK, ALL EXCESS MATERIAL, DEBRIS, ETC., SHALL BE REMOVED AND WORK AREA LEFT CLEAN TO THE OWNER'S SATISFACTION.

NJDOE STATE PROJECT NO.: 4130-050-19-4000

REV	REVISION DESCRIPTION	BY	DATE
0	ISSUED FOR BID AND CONSTRUCTION	RPS	4 NOV 2019

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STRUCTURAL

SCALE: AS NOTED
DRAWN BY:
DESIGNED BY:
CHECKED BY:
APPROVED BY:
PROJECT MANAGER:

PROJECT
PISCATAWAY HIGH SCHOOL
BLEACHERS, FIELD LIGHTING & STORAGE FACILITY REPLACEMENT
PISCATAWAY NEW JERSEY

TITLE
GENERAL NOTES AND SPECIFICATIONS

EIA DRAWING NO.
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CLIENT DWG. NO.
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EIA PROJECT NO.
ES8531.01

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