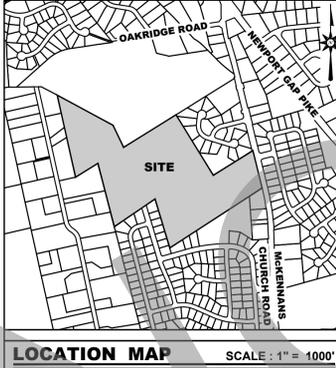
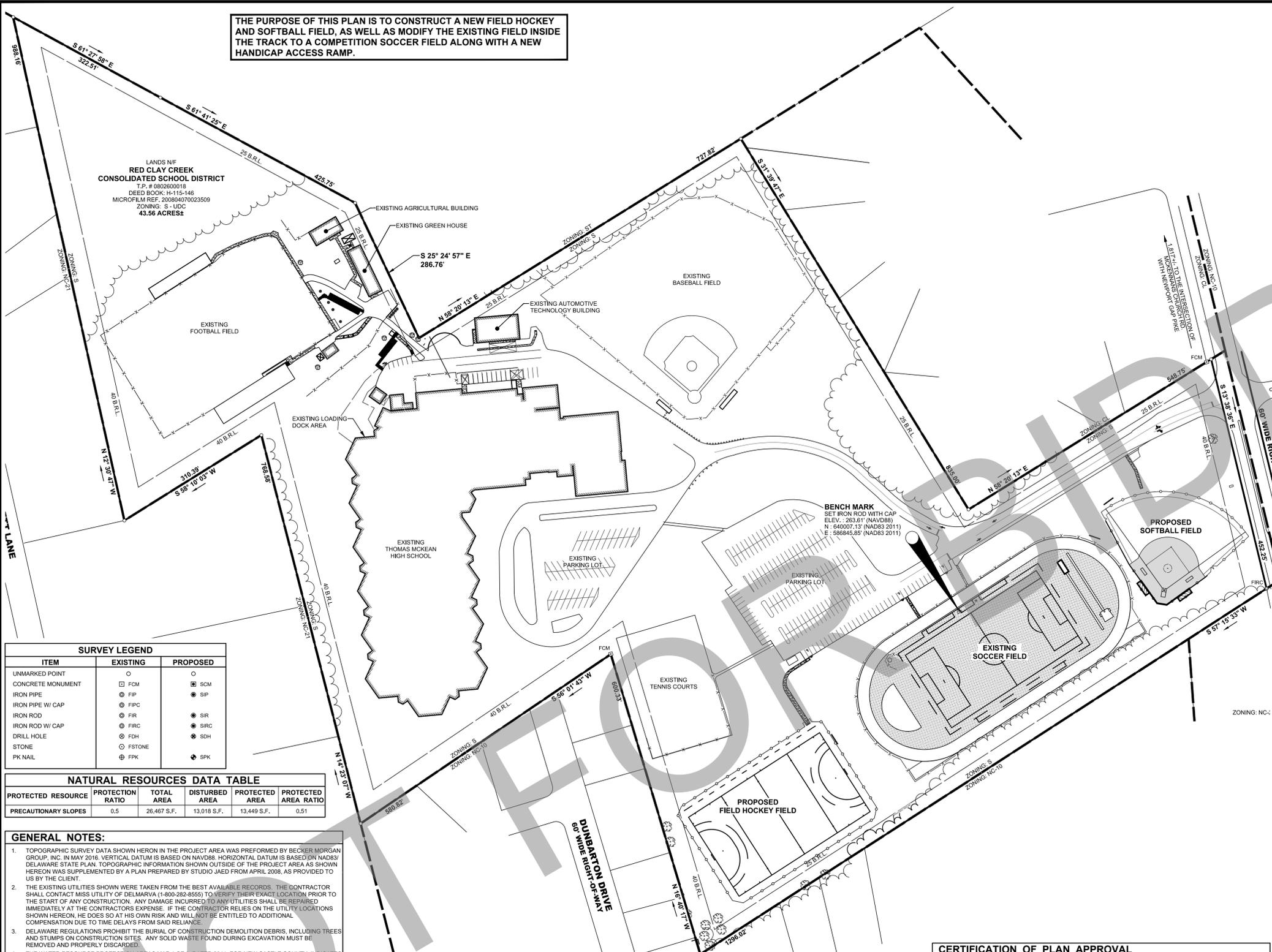


THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A NEW FIELD HOCKEY AND SOFTBALL FIELD, AS WELL AS MODIFY THE EXISTING FIELD INSIDE THE TRACK TO A COMPETITION SOCCER FIELD ALONG WITH A NEW HANDICAP ACCESS RAMP.



**SHEET INDEX**

- C-001 COVER SHEET
- C-101 EXISTING CONDITION / DEMOLITION PLAN
- C-102 EXISTING CONDITION / DEMOLITION PLAN
- C-401 GRADING & UTILITY PLAN
- C-402 GRADING & UTILITY PLAN
- C-500 STORMWATER MANAGEMENT COVER SHEET
- C-501 SCHEMATIC CONSTRUCTION SITE STORMWATER PLAN
- C-502 PRE-CONSTRUCTION STORMWATER MANAGEMENT PLAN
- C-503 PRE-CONSTRUCTION STORMWATER MANAGEMENT PLAN
- C-504 CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
- C-505 CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
- C-506 EROSION & SEDIMENT CONTROL DETAILS
- C-507 EROSION & SEDIMENT CONTROL DETAILS
- C-901 CONSTRUCTION DETAILS
- C-902 CONSTRUCTION DETAILS
- C-903 CONSTRUCTION DETAILS
- C-904 CONSTRUCTION DETAILS
- E01 ELECTRICAL PLAN

**SURVEY LEGEND**

ITEM	EXISTING	PROPOSED
UNMARKED POINT	○	○
CONCRETE MONUMENT	□ FCM	■ SCM
IRON PIPE	● FIP	● SIP
IRON PIPE W/ CAP	⊙ FIPC	⊙ SIPC
IRON ROD	⊙ FIR	⊙ SIR
IRON ROD W/ CAP	⊙ FIR	⊙ SIR
DRILL HOLE	⊙ FDH	⊙ SDH
STONE	⊙ FSTONE	⊙ SSTONE
PK NAIL	⊙ FPK	⊙ SPK

**NATURAL RESOURCES DATA TABLE**

PROTECTED RESOURCE	PROTECTION RATIO	TOTAL AREA	DISTURBED AREA	PROTECTED AREA	PROTECTED AREA RATIO
PRECAUTIONARY SLOPES	0.5	26,467 S.F.	13,018 S.F.	13,449 S.F.	0.51

- GENERAL NOTES:**
- TOPOGRAPHIC SURVEY DATA SHOWN HEREON IN THE PROJECT AREA WAS PERFORMED BY BECKER MORGAN GROUP, INC. IN MAY 2016. VERTICAL DATUM IS BASED ON NAVD83. HORIZONTAL DATUM IS BASED ON NAD83/ DELAWARE STATE PLAN. TOPOGRAPHIC INFORMATION SHOWN OUTSIDE OF THE PROJECT AREA AS SHOWN HEREON WAS SUPPLEMENTED BY A PLAN PREPARED BY STUDIO JAED FROM APRIL 2008, AS PROVIDED TO US BY THE CLIENT.
  - THE EXISTING UTILITIES SHOWN WERE TAKEN FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELAWARE (1-800-292-6559) TO VERIFY THEIR EXACT LOCATION PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE INCURRED TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. IF THE CONTRACTOR RELIES ON THE UTILITY LOCATIONS SHOWN HEREON, HE DOES SO AT HIS OWN RISK AND WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION DUE TO TIME DELAYS FROM SAID RELIANCE.
  - DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING EXCAVATION MUST BE REMOVED AND PROPERLY DISCARDED.
  - THE WATER RESOURCE PROTECTION AREAS MAP 1 OF 3, DATED 2011, FOR NEW CASTLE COUNTY, INDICATES THAT NO PORTION OF THE SITE IS LOCATED IN THE 'EROSION PRONE SLOPES' DESIGNATED OF THE WRPA.
  - THE SITE IS NOT WITHIN A CRITICAL NATURAL AREA BASED ON THE STATE INVENTORY OF NATURAL AREAS.
  - ENVIRONMENTAL CONSULTING SERVICES, INC. CONDUCTED A WETLANDS INVESTIGATION ON APRIL 3, 2003 AND CONCLUDED THAT WETLANDS ARE NONEXISTENT, PER MICROFILM NO. 20080407-0023509.
  - THIS PLAN SUPERSEDES, IN PART, A PLAN TITLED THOMAS MCKEAN HIGH SCHOOL, DATED APRIL 7, 2008 AND RECORDED IN THE RECORDER OF DEEDS IN AND FOR NEW CASTLE COUNTY, STATE OF DELAWARE, INSTRUMENT NO. 20080407-0023509.
  - THE SITE IS NOT WITHIN A 100-YEAR FLOODPLAIN PER FIRM MAP NO. 10003C0045K, PANEL 45 OF 47, DATED FEBRUARY 4, 2015.
  - THERE WILL BE DISTURBANCE OF EXISTING GRADES.
  - ALL IMPROVEMENTS REQUIRED BY THIS PLAN AND THE NEW CASTLE COUNTY CODE SHALL BE SUBJECT TO THE LAND DEVELOPMENT IMPROVEMENT AGREEMENT (LDIA) AND THE PERFORMANCE GUARANTEE INCORPORATED THEREIN. THE LDIA IS RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN AND FOR NEW CASTLE COUNTY, STATE OF DELAWARE ON 04/03/10, AT INSTRUMENT NO. 20031031-0139608.
  - DRAINAGE, EROSION AND SEDIMENT CONTROL, AND STORMWATER MANAGEMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS (DNREC) AND THE NEW CASTLE COUNTY DRAINAGE CODE.
  - A 6' WIDE EASEMENT ON EACH SIDE AND REAR LOT LINE SHOWN ON THE PLAN, AND ON EACH SIDE OF EACH SIDE AND REAR LOT LINE SUBSEQUENTLY ESTABLISHED IN THE AREA SHOWN ON THIS PLAN IS HEREBY DEDICATED TO BE AVAILABLE FOR ANY UTILITY USE, PROVIDED THAT WHERE ANY LOT LINE IS ELIMINATED THE EASEMENT ALONG SAID LOT LINE SHALL BE EXTINGUISHED EXCEPT AS TO UTILITIES THEN EXISTING IN SAID EASEMENT.
  - ALL FIRE HYDRANTS, STANDPIPES, CONNECTIONS, ETC. SHALL BE MARKED AND/OR PROTECTED IN ACCORDANCE WITH STANDARDS FOR COMPLIANCE WITH DELAWARE STATE FIRE REGULATIONS.
  - EROSION AND SEDIMENT CONTROL PRACTICES AND CONSTRUCTION METHODS SHALL COMPLY WITH THE PROCEDURES OUTLINED IN THE 'DELAWARE EROSION AND SEDIMENT CONTROL' HANDBOOK, MOST CURRENT EDITION.
  - THIS PLAN IS SUBJECT TO THE IMPACT FEE PROVISIONS OF CHAPTER 40, ARTICLE 14 OF THE NEW CASTLE COUNTY CODE, AS MAY BE AMENDED BY NEW CASTLE COUNTY COUNCIL.
  - NEW CASTLE COUNTY HAS THE RIGHT OF ACCESS FOR THE PURPOSES OF OPERATING, MAINTAINING, AND REPAIRING THE SANITARY SEWER LINES CONTAINED WITHIN THE SEWER EASEMENTS SHOWN ON THIS PLAN.

**LEGEND**

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONCRETE CURB & GUTTER	[Symbol]	[Symbol]	SANITARY GRAVITY SEWER LINE, SIZE & FLOW DIRECTION	[Symbol]	[Symbol]
CONCRETE SIDEWALK, SLAB / PAVING OR LOT	[Symbol]	[Symbol]	SANITARY SEWER FORCE MAIN, SIZE & FLOW DIRECTION	[Symbol]	[Symbol]
IMPERVIOUS SURFACED ROAD, DRIVE OR LOT	[Symbol]	[Symbol]	SANITARY SEWER MANHOLE (S.M.H.)	[Symbol]	[Symbol]
INDIVIDUAL TREE OR BUSH	[Symbol]	[Symbol]	SANITARY SEWER CLEANOUT	[Symbol]	[Symbol]
EVERGREEN	[Symbol]	[Symbol]	WATER MAIN & SIZE	[Symbol]	[Symbol]
DECIDUOUS	[Symbol]	[Symbol]	FIRE HYDRANT	[Symbol]	[Symbol]
WIRE FENCE	[Symbol]	[Symbol]	WATER VALVE (W.V.) OR METER (W.M.)	[Symbol]	[Symbol]
CHAINLINK FENCE	[Symbol]	[Symbol]	STORM DRAIN MANHOLE (S.D.M.H.)	[Symbol]	[Symbol]
STOCKADE FENCE	[Symbol]	[Symbol]	STORM DRAIN LINE (CMP OR RCP)	[Symbol]	[Symbol]
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)	[Symbol]	[Symbol]	CATCH BASIN	[Symbol]	[Symbol]
DRAINAGE DITCH OR SWALE	[Symbol]	[Symbol]	UTILITY POLE W/ OVERHEAD SERVICE (TELEPHONE OR ELECTRIC OR BOTH)	[Symbol]	[Symbol]
EMBANKMENT SIDESLOPES (DOWN)	[Symbol]	[Symbol]	UNDERGROUND ELECTRIC	[Symbol]	[Symbol]
CONTOUR	[Symbol]	[Symbol]	UNDERGROUND TELEPHONE	[Symbol]	[Symbol]
ELEVATION SPOT SHOT	[Symbol]	[Symbol]	UNDERGROUND GAS MAIN	[Symbol]	[Symbol]
BENCH MARK	[Symbol]	[Symbol]	PAVEMENT TO BE REMOVED	[Symbol]	[Symbol]
PROPERTY OR RIGHT-OF-WAY LINE	[Symbol]	[Symbol]			
CENTRLINE	[Symbol]	[Symbol]			
LIGHT POLE	[Symbol]	[Symbol]			
CONSTRUCTION NOTE	[Symbol]	[Symbol]			

**CERTIFICATION OF PLAN APPROVAL**

APPROVED \_\_\_\_\_ BY \_\_\_\_\_ (GENERAL MANAGER)  
 FOR DEPARTMENT OF LAND USE OF NEW CASTLE COUNTY.

APPROVED \_\_\_\_\_ BY \_\_\_\_\_ (GENERAL MANAGER)  
 FOR COUNTY COUNCIL OF NEW CASTLE COUNTY.

**OWNERS CERTIFICATION**

WE, RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT, HEREBY CERTIFY WE ARE THE OWNER OF THE PROPERTY WHICH IS SUBJECT OF THIS PLAN AND THAT THE LAND USE ACTION PROPOSED BY THIS PLAN IS MADE AT OUR DIRECTION AND THAT WE AUTHORIZE THIS PLAN TO BE RECORDED IN ACCORDANCE WITH THE REGULATIONS OF THE NEW CASTLE COUNTY UNIFIED DEVELOPMENT CODE.

MARCIN MICHALSKI, MANAGER OF FACILITIES AND MAINTENANCE \_\_\_\_\_ DATE \_\_\_\_\_

**ENGINEERS CERTIFICATION**

I, CHRISTOPHER DUKE, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER WITH A BACKGROUND IN CIVIL ENGINEERING IN THE STATE OF DELAWARE AND THAT ALL OF THE INFORMATION ON THIS PLAN IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY ACCEPTED SURVEYING STANDARDS AND PRACTICES AND BY THE NEW CASTLE COUNTY UNIFIED DEVELOPMENT CODE.

CHRISTOPHER DUKE \_\_\_\_\_ P.E. NO. 16378 \_\_\_\_\_ DATE \_\_\_\_\_

**SITE DATA**

- OWNER OF RECORD: RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT  
1502 SPRUCE AVENUE  
WILMINGTON, DE 19805  
302-552-3700
- ENGINEER / SURVEYOR: BECKER MORGAN GROUP INC.  
250 SOUTH MAIN STREET, SUITE 109  
NEWARK, DE 19711  
302-369-3700
- PROPERTY MAP NUMBER: 0802600018
- ZONING CLASSIFICATION: EXISTING: S (SUBURBAN)  
PROPOSED: S (SUBURBAN)
- BULK AREA STANDARDS: STREET YARD: 40'  
SIDE YARD: 25'  
REAR YARD: 40'  
PAVING STREET / OTHER YARD: 20' / 10'  
LOT AREA (MIN): 1 ACRE  
LOT WIDTH (MIN): 100'  
BUILDING HEIGHT (MAX): 45'  
H115 146
- DEED SUMMARY: H115 146
- PLAT REFERENCE: 200804070023509
- PRESENT USE: SCHOOL
- PROPOSED USE: SCHOOL
- EXISTING NUMBER OF LOTS: ONE LOT
- PROPOSED NUMBER OF LOTS: ONE LOT
- TOTAL SITE GROSS AREA: 43.56 ± ACRES
- TOTAL SITE NET AREA: 37.19 ± ACRES
- LENGTH OF R.O.W.: MCKENNA'S CHURCH ROAD (MINOR ARTERIAL - 60' RIGHT-OF-WAY)  
452 LINEAR FEET OF RIGHT-OF-WAY FRONTAGE
- TRACT AREA CALCS:
 

	EXISTING	PROPOSED
BUILDING:	193,651 SF ± (4.45 AC. ±)	193,651 SF ± (4.45 AC. ±)
IMPERV. SURFACE:	294,594 SF ± (6.67 AC. ±)	284,594 SF ± (6.67 AC. ±)
SWM AREA:	0 SF ± (0 AC. ±)	0 SF ± (0 AC. ±)
OPEN SPACE:	1,439,229 SF ± (33.04 AC. ±)	1,439,229 SF ± (33.04 AC. ±)
TOTAL:	1,897,474 SF ± (43.56 AC. ±)	1,897,474 SF ± (43.56 AC. ±)
- SOURCE OF WATER: ARTESIAN WATER COMPANY, INC.  
WATER SUPPLY IS SUBJECT TO THE APPROVAL OF THE DELAWARE STATE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL AND THE DELAWARE DEPARTMENT OF PUBLIC HEALTH.
- SOURCE OF SEWER: NEW CASTLE COUNTY  
SEWERAGE IS SUBJECT TO THE APPROVAL OF NEW CASTLE COUNTY DEPARTMENT OF SPECIAL SERVICES. AT THE TIME OF APPROVAL OF THIS PLAN, SEWER CAPACITY EXISTED TO ACCOMMODATE THE ANTICIPATED FLOWS GENERATED BY THIS ADDITIONAL DEVELOPMENT. NEW CASTLE COUNTY HAS COMMITTED TO PROVIDE SEWER SERVICE IN ACCORDANCE WITH THE LAND DEVELOPMENT IMPROVEMENT AGREEMENT FOR THIS DEVELOPMENT. THE OWNER OF THIS PROPERTY, HIS SUCCESSORS OR ASSIGNS, SHALL BE RESPONSIBLE FOR EXTENDING SEWER SERVICE TO EACH LOT SHOWN ON OR CREATED BY THIS PLAN. PER PREVIOUS RECORDED PLAN (MICROFILM NO. 20080407-0023509), ALL ON SITE SANITARY SEWER LINES ARE TO BE PRIVATELY MAINTAINED. THERE WILL BE NO ADDITIONAL SANITARY SEWER FLOW.
- PARKING CALCULATIONS: EXISTING: 250 SPACES (PREVIOUSLY APPROVED)  
PROPOSED: NO ADDITIONAL SPACES  
EX. HANDICAP: 8 SPACES  
PR. HANDICAP: NO ADDITIONAL SPACES  
REQUIRED HANDICAP: 7 SPACES (1 VAN)
- SURVEY BENCHMARK: NGS MONUMENTATION  
VERTICAL: NAVD83 - GPS NC3  
HORIZONTAL: NAD83 (2011) - DENE  
LINEAR: U.S. SURVEY FOOT  
ANGULAR: DEGREES / MINUTES / SECONDS  
COORDINATE: GROUND COORDINATE
- MONUMENTATION: EXISTING: 4 FOUND  
PROPOSED: 0 TO BE SET
- FIRE HYDRANTS: EXISTING: 2  
PROPOSED: 0
- CLASSROOMS: EXISTING: 70  
PROPOSED: 0
- TOTAL DISTURBED AREA: 6.15+/- ACRES OF DISTURBANCE
- LOADING ZONES: EXISTING: 3 BAYS  
PROPOSED: 0 ADDITIONAL BAYS
- S & S PROGRAM NUMBER: 2016-118
- ADDRESS: 301 MCKENNA'S CHURCH RD, WILMINGTON, DE 19808
- LATITUDE / LONGITUDE: N 39°45'28" / W 75°39'42"
- EXISTING WETLAND AREA: 0 S.F. ±
- DISCHARGE LOCATIONS: THOMAS POINTE SUBDIVISION STORMWATER POND & DELDOT STORMWATER SYSTEM ON MCKENNA CHURCH RD

**BECKER MORGAN GROUP**

ARCHITECTURE  
ENGINEERING

Dover, DE  
309 S. Governors Ave.  
Dover, DE 19904  
Ph. 302.734.7950  
Fax 302.734.7965

Salisbury, MD  
312 West Main St. Suite 300  
Salisbury, MD 21801  
Ph. 410.546.9100  
Fax 410.546.5824

Wilmington, NC  
3205 Randall Parkway, Suite 211  
Wilmington, North Carolina 28403  
Ph. 910.341.7600  
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE  
APPLICATION NO. 2016-0584

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNA'S CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE  
**CONSTRUCTION IMPROVEMENT PLAN COVER SHEET**

ISSUE BLOCK

NO.	DATE	ISSUE FOR BID
1	2-22-2017	ISSUE FOR BID

MARK DATE DESCRIPTION  
 LAYER STATE COLOR

PROJECT NO.: 2015145.00  
 DATE: 11/07/16  
 SCALE: 1" = 100'  
 DRAWN BY: A.P.C. / PROJ. MGR.: C.D.D.

SHEET  
**C-001**  
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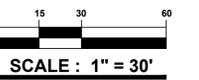
PROJECT TITLE  
APPLICATION NO. 2016-0584

**THOMAS  
McKEAN  
HIGH SCHOOL  
ATHLETIC  
FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**EXISTING  
CONDITIONS AND  
DEMOLITION PLAN**

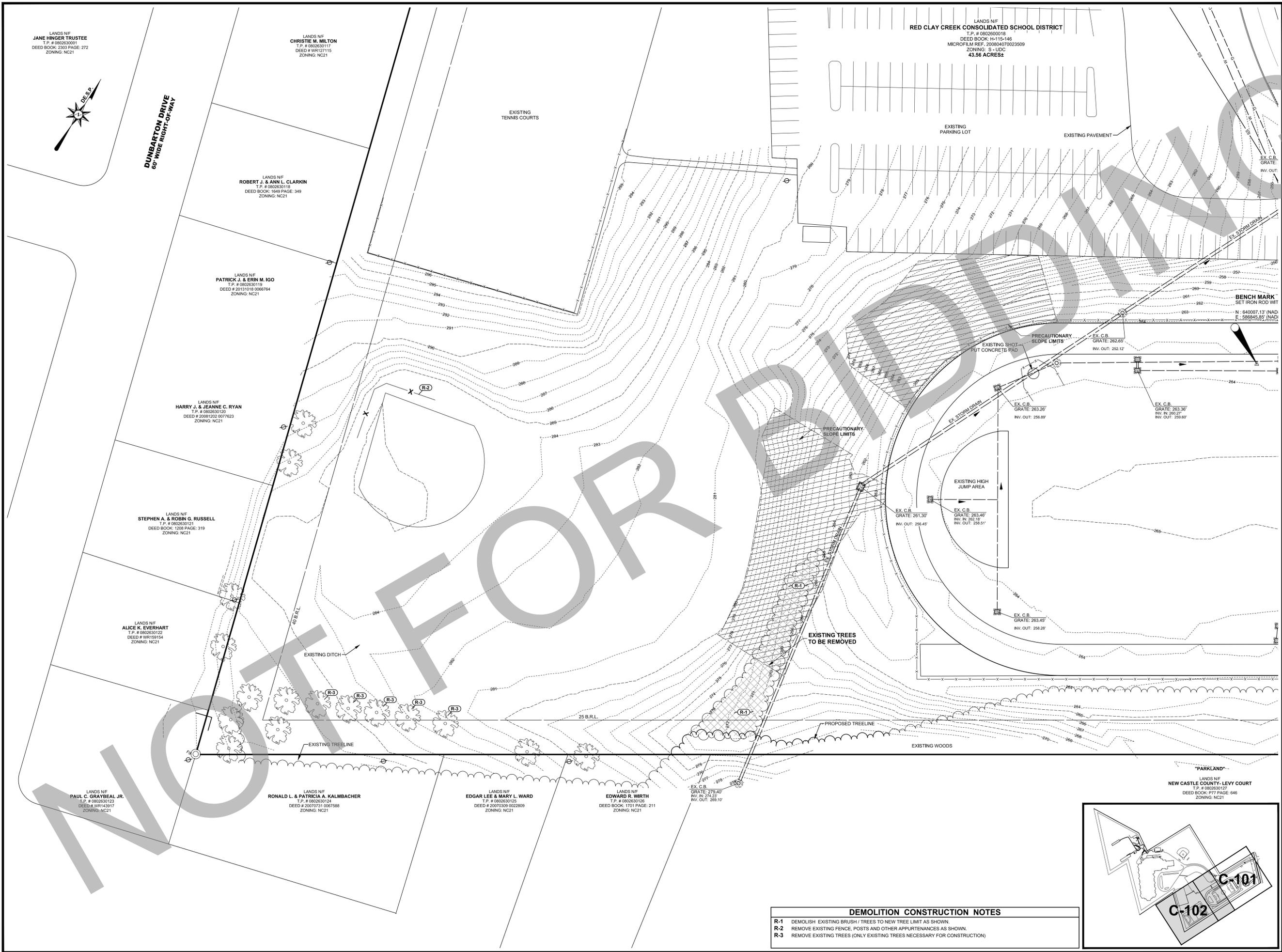


ISSUE BLOCK

MARK	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID
LAYER STATE: C-102		
<b>PROJECT NO.:</b>		<b>2015145.00</b>
<b>DATE:</b>		<b>11/07/16</b>
<b>SCALE:</b>		<b>1" = 30'</b>
<b>DRAWN BY:</b>		<b>A.P.C. / PROJ. MGR.: C.D.D.</b>
SHEET		

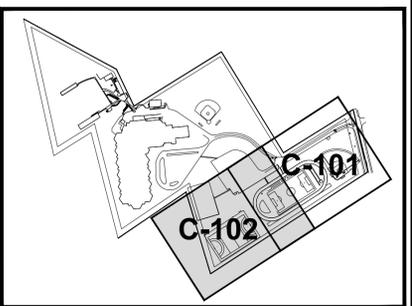
**C-102**

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**DEMOLITION CONSTRUCTION NOTES**

<b>R-1</b>	DEMOLISH EXISTING BRUSH / TREES TO NEW TREE LIMIT AS SHOWN.
<b>R-2</b>	REMOVE EXISTING FENCE, POSTS AND OTHER APPURTENANCES AS SHOWN.
<b>R-3</b>	REMOVE EXISTING TREES (ONLY EXISTING TREES NECESSARY FOR CONSTRUCTION)



LANDS N/F  
RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT  
T.P. # 080260018  
DEED BOOK: H-115-148  
MICROFILM REF: 200804070023509  
ZONING: S - UDC  
43.56 ACRES±

LANDS N/F  
THOMAS POINTE  
MAINTENANCE CORP  
T.P. # 080261119  
DEED BOOK: 2212 PAGE: 112  
ZONING: NC21

LANDS N/F  
NATALIYA DORNO  
T.P. # 080261120  
DEED # 20091190073812  
ZONING: NC21

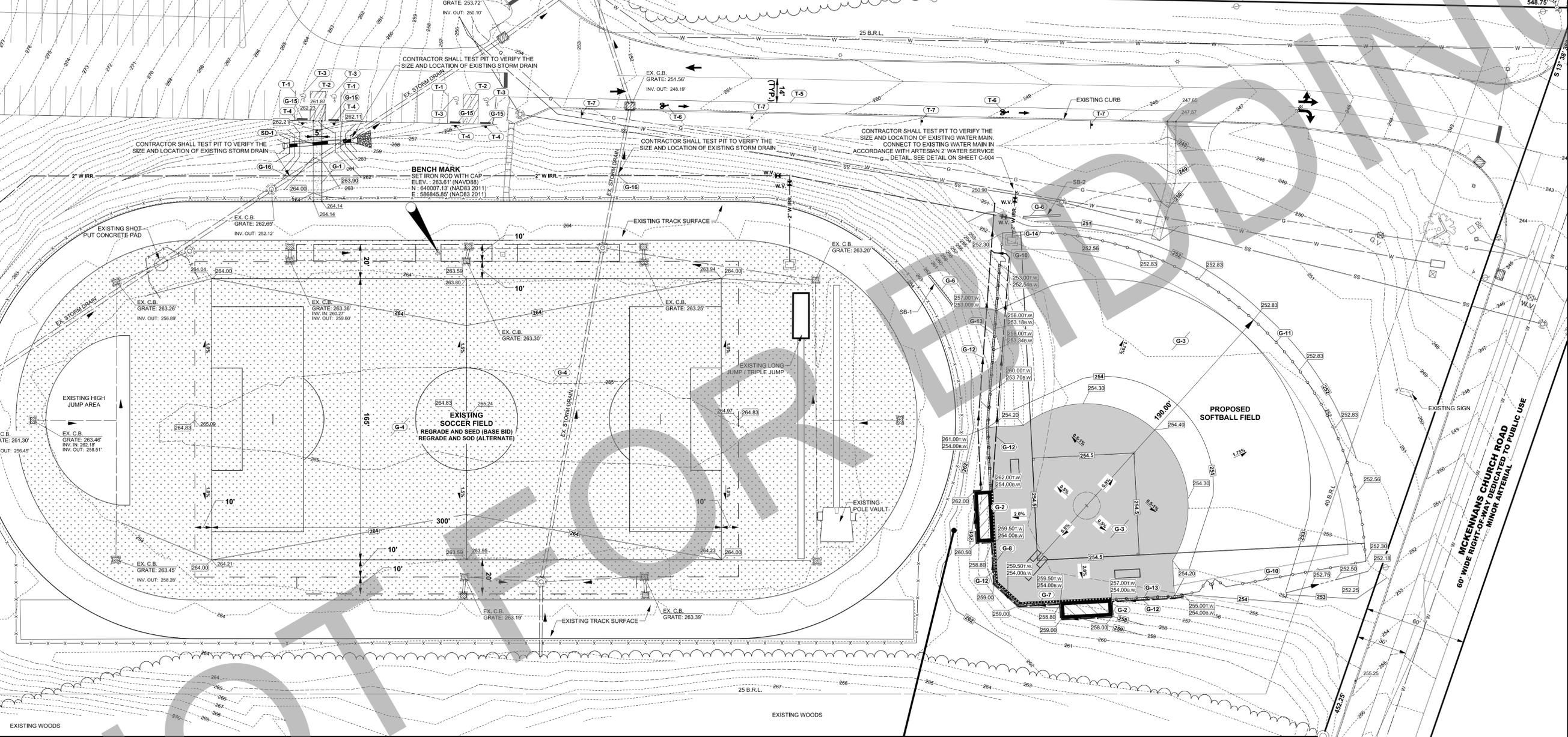
LANDS N/F  
NATALE & LILA PITTI  
T.P. # 080261121  
DEED BOOK: 1166 PAGE: 10  
ZONING: NC21

EXISTING PARKING LOT

EXISTING PAVEMENT



N 58° 20' 13" E



"PARKLAND"  
LANDS N/F  
NEW CASTLE COUNTY - LEVY COURT  
T.P. # 080263027  
DEED BOOK: P17 PAGE: 646  
ZONING: NC21

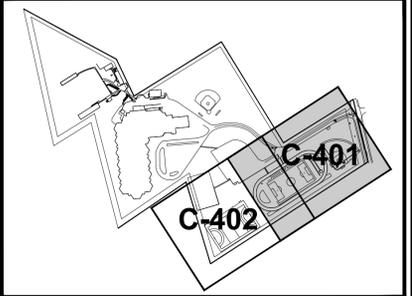
WHERE THE STABILITY OF ADJOINING STRUCTURES IS ENDANGERED BY EXCAVATION OPERATIONS, SUPPORT SYSTEMS SUCH AS SHORING, BRACING, OR UNDERPINNING SHALL BE PROVIDED TO ENSURE THE STABILITY OF SUCH STRUCTURES FOR THE DURATION OF CONSTRUCTION. THESE MEANS AND METHODS NECESSARY SHALL BE INCLUDED IN THE CONTRACT.

**STORM DRAIN PIPE SCHEDULE**

PIPE NO.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
SD-1	18"	RCP	44'	2.07%	258.34'	257.43'
SD-2	18"	RCP	35'	0.57%	274.65'	274.45'

- STRIPING & SIGNAGE CONSTRUCTION NOTES**
- T-1 PROPOSED EPOXY RESIN STRIPING - 4' WIDE SOLID BLUE ACCESSIBLE PARKING SPACE (TYP).
  - T-2 PROPOSED EPOXY RESIN STRIPING - 4' STRIPING - 4' WIDE SOLID ACCESSIBLE BLUE LINES, 45" @ 4' O.C. SPACING (TYP).
  - T-3 PROPOSED THERMO ACCESSIBLE SYMBOL, PAINT ACCESSIBLE BLUE (TYP). SEE DETAIL SHEET C-901.
  - T-4 PROPOSED "AN ACCESSIBLE HANDICAP PARKING" SIGN (TYP). SEE DETAIL SHEET C-901.
  - T-5 PROPOSED PAINTED STRIPING - 4" SOLID WHITE LINE.
  - T-6 PROPOSED BIKE LANE STRIPING IN ACCORDANCE WITH THE LATEST "DEMUTCD".
  - T-7 PROPOSED "NO PARKING ANYTIME" SIGN (R7-1) IN ACCORDANCE WITH THE LATEST "DEMUTCD".

- GENERAL CONSTRUCTION NOTES**
- G-1 INSTALL 4" THICK, 5' WIDE CONCRETE SIDEWALK. SEE DETAIL SHEET C-901.
  - G-2 PROPOSED SOFTBALL DUGOUT WITH 48" CHAIN LINK FENCE ALONG BACKSIDE OF THE DUGOUT. SEE DETAIL SHEET C-903 FOR DUGOUT SECTION AND TOP AND BOTTOM ELEVATIONS.
  - G-3 PROPOSED COMPETITION SOFTBALL FIELD. SEE DETAIL SHEET C-902.
  - G-4 EXISTING SOCCER FIELD TO BE REGRADED AND SEEDED / SODDED. SEE SPECIFICATIONS. SEE DETAIL SHEET C-901.
  - G-5 INSTALL 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-901.
  - G-6 PROPOSED SCOREBOARD FOR EACH RESPECTIVE SPORT. CONTRACTOR TO REFER TO ELECTRICAL DESIGN DRAWINGS FROM ELECTRICAL ENGINEER TO PROVIDE POWER TO THE SCOREBOARD.
  - G-7 PROPOSED BACKSTOP RETAINING WALL. SEE DETAIL SHEET C-903.
  - G-8 PROPOSED TRENCH DRAIN. INSTALL AT A MINIMUM SLOPE OF 0.5%. SEE DETAIL SHEET C-904.
  - G-9 PROPOSED COMPETITION FIELD HOCKEY FIELD. SEE DETAIL SHEET C-901.
  - G-10 PROPOSED 4" CHAINLINK FENCE. SEE DETAIL SHEET C-902.
  - G-11 PROPOSED 6" CHAINLINK FENCE. SEE DETAIL SHEET C-902.
  - G-12 PROPOSED 10" NDS EZ FLOW PERFORATED PIPE. INSTALL AT A MINIMUM SLOPE OF 0.5%. SEE DETAIL SHEET C-904.
  - G-13 PROPOSED FOUL LINE RETAINING WALL WITH 48" CHAIN LINK FENCE. SEE DETAIL SHEET C-903.
  - G-14 CONTRACTOR TO INSTALL IRRIGATION VALVE, VALVE BOX AND COVER TO FACILITATE CONNECTION OF 1-1/2" UNIVERSAL VALVE OPENING ELBOW TO SUPPLY WATER REEL. IRRIGATION SYSTEM. VALVE BOX SHALL BE 12" x 18" x 12" REINFORCED POLYETHYLENE RECTANGULAR BOX WITH HEAVY DUTY LID, FLUSH WITH FINISH GRADE.
  - G-15 PROPOSED PARKING BUMPER BLOCK (TYP). SEE DETAIL SHEET C-901.
  - G-16 CONTRACTOR TO INSTALL WATER IRRIGATION LINE TO MAINTAIN 42" MINIMUM COVER. CONTRACTOR TO DEFLECT WATER MAIN BELOW EXISTING STORM DRAIN PIPE AS NECESSARY TO MAINTAIN MIN COVER AND 18" VERTICAL SEPARATION.

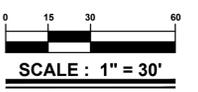


PROJECT TITLE  
APPLICATION NO. 2016-0584

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE  
**GRADING & UTILITY PLAN**



ISSUE BLOCK

NO.	DATE	DESCRIPTION
2	3-08-2017	ADDENDUM 1
1	2-22-2017	ISSUE FOR BID

MARK DATE DESCRIPTION  
LAYER(S) (LAST)

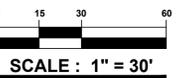
PROJECT NO.: 2015145.00  
DATE: 11/07/16  
SCALE: 1" = 30"  
DRAWN BY: A.P.C. / PROJ. MGR.: C.D.D.

SHEET  
**C-401**  
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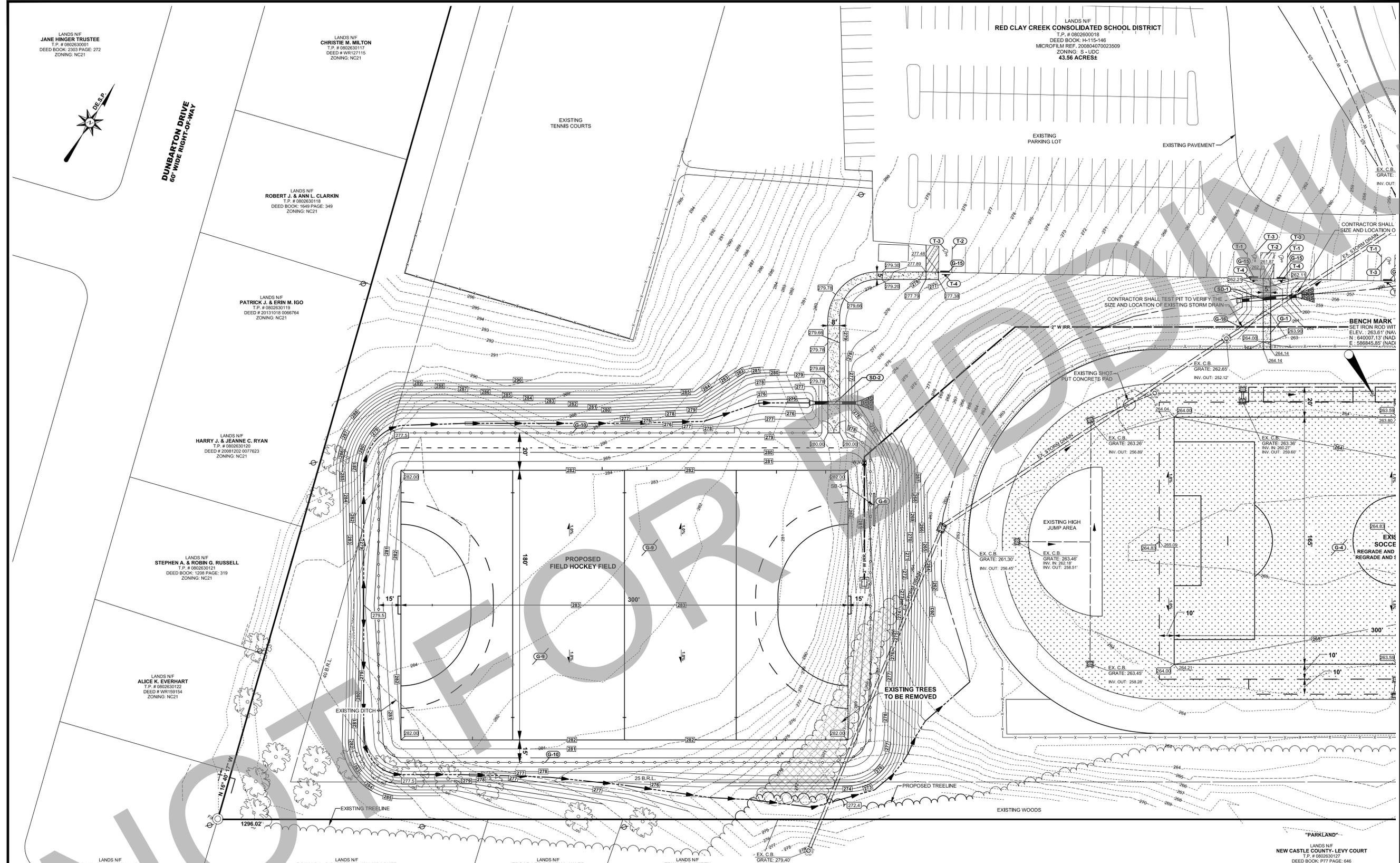
**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

GRADING & UTILITY PLAN



ISSUE BLOCK	NO.	DATE	DESCRIPTION
	2	3-08-2017	ADDENDUM 1
	1	2-22-2017	ISSUE FOR BID
MARK			
LAYER/STATE	C-402		
<b>PROJECT NO.:</b>	<b>2015145.00</b>		
<b>DATE:</b>	<b>11/07/16</b>		
<b>SCALE:</b>	<b>1" = 30'</b>		
<b>DRAWN BY:</b>	<b>A.P.C. / PROJ. MGR.: C.D.D.</b>		
<b>SHEET</b>			
<b>C-402</b>			
COPYRIGHT: 2015			



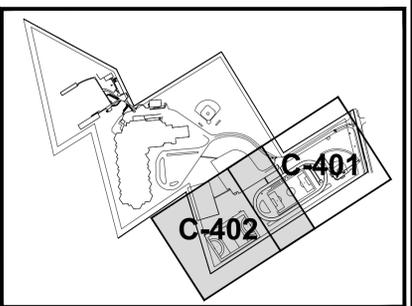
**STORM DRAIN PIPE SCHEDULE**

PIPE NO.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
SD-1	18"	RCP	44'	2.07%	258.34'	257.43'
SD-2	18"	RCP	35'	0.57%	274.65'	274.45'

**STRIPING & SIGNAGE CONSTRUCTION NOTES**

<b>T-1</b>	PROPOSED EPOXY RESIN STRIPING - 4" WIDE SOLID BLUE ACCESSIBLE PARKING SPACE (TYP).
<b>T-2</b>	PROPOSED EPOXY RESIN STRIPING - 4" STRIPING - 4" WIDE SOLID ACCESSIBLE BLUE LINES, 45" @ 4" O.C. SPACING (TYP).
<b>T-3</b>	PROPOSED THERMO ACCESSIBLE SYMBOL, PAINT ACCESSIBLE BLUE (TYP). SEE DETAIL SHEET C-901.
<b>T-4</b>	PROPOSED "VAN ACCESSIBLE HANDICAP PARKING" SIGN (TYP). SEE DETAIL SHEET C-901.
<b>T-5</b>	PROPOSED PAINTED STRIPING - 4" SOLID WHITE LINE.
<b>T-6</b>	PROPOSED BIKE LANE STRIPING IN ACCORDANCE WITH THE LATEST "DEMUTCD".
<b>T-7</b>	PROPOSED "NO PARKING ANYTIME" SIGN (R7-1) IN ACCORDANCE WITH THE LATEST "DEMUTCD".

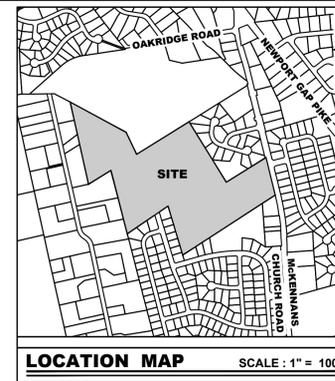
- GENERAL CONSTRUCTION NOTES**
- G-1** INSTALL 4" THICK, 5' WIDE CONCRETE SIDEWALK. SEE DETAIL SHEET C-901.
  - G-2** PROPOSED SOFTBALL DUGOUT WITH 48" CHAIN LINK FENCE ALONG BACKSIDE OF THE DUGOUT. SEE DETAIL SHEET C-903 FOR DUGOUT SECTION AND TOP AND BOTTOM ELEVATIONS.
  - G-3** PROPOSED COMPETITION SOFTBALL FIELD. SEE DETAIL SHEET C-902.
  - G-4** EXISTING SOCCER FIELD TO BE REGRADED AND SEEDED / SODDED. SEE SPECIFICATIONS. SEE DETAIL SHEET C-901.
  - G-5** INSTALL 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-901.
  - G-6** PROPOSED SCOREBOARD FOR EACH RESPECTIVE SPORT. CONTRACTOR TO REFER TO ELECTRICAL DESIGN DRAWINGS FROM ELECTRICAL ENGINEER TO PROVIDE POWER TO THE SCOREBOARD.
  - G-7** PROPOSED BACKSTOP RETAINING WALL. SEE DETAIL SHEET C-903.
  - G-8** PROPOSED TRENCH DRAIN. INSTALL AT A MINIMUM SLOPE OF 0.5%. SEE DETAIL SHEET C-904.
  - G-9** PROPOSED COMPETITION FIELD HOCKEY FIELD. SEE DETAIL SHEET C-901.
  - G-10** PROPOSED 4" CHAINLINK FENCE. SEE DETAIL SHEET C-902.
  - G-11** PROPOSED 6" CHAINLINK FENCE. SEE DETAIL SHEET C-902.
  - G-12** PROPOSED 10" NDS EZ FLOW PERFORATED PIPE. INSTALL AT A MINIMUM SLOPE OF 0.5%. SEE DETAIL SHEET C-904.
  - G-13** PROPOSED FOUL LINE RETAINING WALL WITH 48" CHAIN LINK FENCE. SEE DETAIL SHEET C-903.
  - G-14** CONTRACTOR TO INSTALL IRRIGATION VALVE, VALVE BOX AND COVER TO FACILITATE CONNECTION OF 1-1/2" UNIVERSAL VALVE OPENING ELBOW TO SUPPLY WATER REEL. IRRIGATION SYSTEM. VALVE BOX SHALL BE 12" x 18" x 12" REINFORCED POLYETHYLENE RECTANGULAR BOX WITH HEAVY DUTY LID, FLUSH WITH FINISH GRADE.
  - G-15** PROPOSED PARKING BUMPER BLOCK (TYP). SEE DETAIL SHEET C-901.
  - G-16** CONTRACTOR TO INSTALL WATER IRRIGATION LINE TO MAINTAIN 42" MINIMUM COVER. CONTRACTOR TO DEFLECT WATER MAIN BELOW EXISTING STORM DRAIN PIPE AS NECESSARY TO MAINTAIN MIN COVER AND 18" VERTICAL SEPARATION.



**SWM MAINTENANCE AGREEMENT**  
 THE MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES ON-SITE, INCLUDING THE STORM DRAIN SYSTEM, DITCHES, SWALES, PONDS, ETC. SHALL BE THE RESPONSIBILITY OF THE OWNER POST CONSTRUCTION.

**SEDIMENT AND STORMWATER CONSTRUCTION NOTES:**

- THE DNREC SEDIMENT AND STORMWATER PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORM WATER MANAGEMENT PLAN.
- REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORM WATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORM WATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
- IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORM WATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS DIKES, SWALES, DITCHES, PERIMETER SLOPES, STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN FOURTEEN (14) CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION CONTROL HANDBOOK, LATEST EDITION.
- ALL SITE DEWATERING SHALL BE DONE THROUGH AN APPROVED FILTRATION DEVICE AND PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR THE NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY DNREC WELL PERMITTING BRANCH.
- THE APPROVAL FOR THIS SITE IS VALID FOR FIVE (5) YEARS FROM THE APPROVAL DATE STAMPED ON THE PLAN BY DNREC.
- POST CONSTRUCTION VERIFICATION DOCUMENTS ARE TO BE SUBMITTED TO DNREC SEDIMENT AND STORMWATER PROGRAM WITHIN 60-DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION. POST CONSTRUCTION VERIFICATION DOCUMENTS ARE TO INCLUDE STORMWATER AS-BUILTS WHICH ARE SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR AND SHOULD BE PROVIDED BY THE CONTRACTOR.
- APPROVAL OF A SEDIMENT AND STORM WATER PLAN SHALL NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORM WATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
- THE NOTICE OF INTENT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NPDES GENERAL PERMIT FOR THIS PROJECT IS # 5369. AT ANY TIME THE OWNERSHIP FOR THIS PROJECT CHANGES, A TRANSFER OF AUTHORIZATION OR A CO-PERMITTEE APPLICATION MUST BE SUBMITTED TO DNREC. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITY UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY DNREC.
- THE OWNER SHALL BE FAMILIAR WITH AN COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT ASSOCIATED WITH THE PROJECT, INCLUDING BUT NOT LIMITED TO, PERFORMING WEEKLY SITE INSPECTION DURING THE CONSTRUCTION AND AFTER RAIN EVENTS AND MAINTAINING WRITTEN LOGS OF THESE INSPECTIONS.
- BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1800-282-8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITY MARKED ONSITE.
- THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROL SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE ACCUMULATED SEDIMENT SHALL BE REMOVED WITHIN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIME OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
- BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENT OF 7 DEL. C. CH80, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, AND DEPARTMENT POLICIES, PROCEDURES AND GUIDANCE.
- DOCUMENTATION OF SOIL TESTING AND MATERIAL USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC. SHALL BE PROVIDED TO THE DEPARTMENT OR DELEGATED AGENCY TO VERIFY THAT THE PERMANENT OR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN AND THE STANDARDS AND SPECIFICATIONS OF THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE DEPARTMENT OR DELEGATED AGENCY SHALL HAVE THE DISCRETION TO REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATION PROVIDED IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST ADDITION.
- PERIODIC MAINTENANCE OF ALL SEDIMENT CONTROL MEASURES IS REQUIRED TO INSURE EFFECTIVE SEDIMENT CONTROL. INSPECTION OF ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MADE AT LEAST WEEKLY AND AFTER EACH RAINFALL EVENT. REPAIRS SHALL BE THE CONTRACTORS RESPONSIBILITY AND MADE WITHIN 24 HOURS OF THE RAIN EVENT OR WHEN OTHERWISE IDENTIFIED.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL CONFORM TO DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- THE SEQUENCE OF CONSTRUCTION ON THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN MUST BE STRICTLY ADHERED. ANY DIVERGENCE FROM THE APPROVED CONSTRUCTION SEQUENCE REQUIRES A WRITTEN REQUEST TO MODIFY AND THE WRITTEN APPROVAL OF DNREC.
- A COPY OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS MUST BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.
- TO PREVENT OR REDUCE THE MOVEMENT OF DUST FROM DISTURBED SOIL SURFACES THE SITE SHALL BE SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST AND REPEATED AS NECESSARY. ALTERNATIVE METHODS OF DUST CONTROL REQUIRE APPROVAL OF DNREC.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND REPAIR ALL EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT PRACTICES DURING UTILITY INSTALLATION.
- ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT TRACKING OF MUD ONTO PUBLIC WAYS BY A STABILIZED CONSTRUCTION ENTRANCE.
- IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORM WATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC.
- A PRE-CONSTRUCTION MEETING MUST TAKE PLACE BEFORE ANY EARTH DISTURBING ACTIVITY BEGINS. THE MEETING MUST BE ATTENDED BY AN OWNER'S REPRESENTATIVE, CONTRACTOR, CCR (IF REQUIRED FOR THE SITE), AND DNREC INSPECTOR.
- DNREC RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE INSPECTION.
- SOIL STOCKPILE AREAS MUST BE DELINEATED. LOCATE STOCKPILES ON AREAS WITH LITTLE OR NO SLOPE. STOCKPILES MUST BE SURROUNDED WITH SILT FENCE OR A STABILIZED EARTHEN BERM. STOCKPILE AREAS MUST BE SEEDED WITH TEMPORARY SEEDING MIXTURE AND MULCHED.
- DNREC RESERVES THE RIGHT TO WITHHOLD PERMITS AND LETTERS OF NO OBJECTION RELATED TO OBTAINING CERTIFICATES OF OCCUPANCY FROM THE LOCAL JURISDICTION FOR NON COMPLIANCE WITH THE PLANS AND SPECIFICATIONS FOR STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL.
- DNREC RESERVES THE RIGHT TO ADD, DELETE, MODIFY OR OTHERWISE ALTER THE SEDIMENT CONTROL PROVISIONS OF THIS PLAN IN THE EVENT ADDITIONAL PROTECTION BECOMES NECESSARY.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROL MEASURES DURING CONSTRUCTION.
- ALL TEMPORARY STOCKPILES ARE TO BE LOCATED ON AREAS WITH LITTLE OR NO SLOPE AND PROTECTED BY SILT FENCE OR A STABILIZED EARTHEN BERM AND ARE TO BE TEMPORARILY STABILIZED.
- EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED.
- SEDIMENT CONTROL FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS:
  - EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
  - IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACK FILLED, COMPACTED AND STABILIZED.
  - TEMPORARY SILT FENCE OR STRAW BALE DIKES SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE WORKING DAY.
- EROSION CONTROL MATTING IS REQUIRED ON SLOPES OF 3:1 OR GREATER IN AREAS OF CONCENTRATED FLOW. MATTING TYPE IS TO BE NORTH AMERICAN GREEN S150BN (OR APPROVED EQUIVALENT)
- ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY DNREC SITE INSPECTOR AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
- NOTIFY DNREC INSPECTOR A MINIMUM OF (5) DAYS PRIOR TO THE START OF THE STORMWATER SYSTEM CONSTRUCTION. STORMWATER FACILITIES MUST BE REVIEWED THROUGH THEIR CONSTRUCTION.
- EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH DNREC SEDIMENT AND STORMWATER PROGRAM SITE INSPECTORS APPROVAL.
- THE TERMINATION OF THE CONSTRUCTION GENERAL PERMIT WILL REQUIRE SUBMISSION AND ACCEPTANCE OF THE POST CONSTRUCTION VERIFICATION DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, ALL ELEMENTS OF SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED, AND ACCEPTANCE OF THE FINAL OPERATION AND MAINTENANCE PLAN.



SITE DATA	
1. OWNER OF RECORD:	RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT 1502 SPRUCE AVENUE WILMINGTON, DE 19805 302-552-3700
2. ENGINEER / SURVEYOR:	BECKER MORGAN GROUP INC. 250 SOUTH MAIN STREET, SUITE 109 NEWARK, DE 19711 302-369-3700
3. PROPERTY MAP NUMBER:	080260018
4. ZONING CLASSIFICATION:	EXISTING: S (SUBURBAN) PROPOSED: S (SUBURBAN)
5. BULK AREA STANDARDS:	STREET YARD: 40' SIDE YARD: 25' REAR YARD: 40' PAVING STREET / OTHER YARD: 20' / 10' LOT AREA (MIN): 1 ACRE LOT WIDTH (MIN): 100' BUILDING HEIGHT (MAX): 45' H115 146
6. DEED SUMMARY:	200804070203509
7. PLAT REFERENCE:	SCHOOL
8. PRESENT USE:	SCHOOL
9. PROPOSED USE:	SCHOOL
10. EXISTING NUMBER OF LOTS:	ONE LOT
11. PROPOSED NUMBER OF LOTS:	ONE LOT
12. TOTAL SITE GROSS AREA:	43.99 ± ACRES
13. TOTAL SITE NET AREA:	37.19 ± ACRES
14. LENGTH OF R.O.W.:	MCKENNA'S CHURCH ROAD (MINOR ARTERIAL - 60' RIGHT-OF-WAY) 452 LINEAR FEET OF RIGHT-OF-WAY FRONTAGE
15. TRACT AREA CALCS:	EXISTING PROPOSED BUILDING: 193,651 SF ± (4.45 AC. ±) 193,651 SF ± (4.45 AC. ±) IMPERY SURFACE: 284,594 SF ± (6.07 AC. ±) 284,594 SF ± (6.07 AC. ±) SWM AREA: 0 SF ± (0 AC. ±) 0 SF ± (0 AC. ±) OPEN SPACE: 1,439,229 SF ± (33.04 AC. ±) 1,439,229 SF ± (33.04 AC. ±) TOTAL: 1,897,474 SF ± (43.56 AC. ±) 1,897,474 SF ± (43.56 AC. ±)
16. SOURCE OF WATER:	ARTESIAN WATER COMPANY, INC. WATER SUPPLY IS SUBJECT TO THE APPROVAL OF THE DELAWARE STATE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL AND THE DELAWARE DEPARTMENT OF PUBLIC HEALTH.
17. SOURCE OF SEWER:	NEW CASTLE COUNTY SEWERAGE IS SUBJECT TO THE APPROVAL OF NEW CASTLE COUNTY DEPARTMENT OF SPECIAL SERVICES. AT THE TIME OF APPROVAL OF THIS PLAN, SEWER CAPACITY EXISTED TO ACCOMMODATE THE ANTICIPATED FLOWS GENERATED BY THIS ADDITIONAL DEVELOPMENT. NEW CASTLE COUNTY HAS COMMITTED TO PROVIDE SEWER SERVICE IN ACCORDANCE WITH THE LAND DEVELOPMENT IMPROVEMENT AGREEMENT FOR THIS DEVELOPMENT. THE OWNER OF THIS PROPERTY, HIS SUCCESSORS OR ASSIGNS, SHALL BE RESPONSIBLE FOR EXTENDING SEWER SERVICE TO EACH LOT SHOWN ON OR CREATED BY THIS PLAN. PER PREVIOUS RECORDED PLAN (MICROPLM NO. 20080407-0203509), ALL ON SITE SANITARY SEWER LINES ARE TO BE PRIVATELY MAINTAINED. THERE WILL BE NO ADDITIONAL SANITARY SEWER FLOW.
18. PARKING CALCULATIONS:	EXISTING: 250 SPACES (PREVIOUSLY APPROVED) PROPOSED: NO ADDITIONAL SPACES EX. HANDICAP: 8 SPACES PR. HANDICAP: NO ADDITIONAL SPACES REQUIRED HANDICAP: 7 SPACES (1 VAN)
18. SURVEY BENCHMARK:	NGS MONUMENTATION VERTICAL: NAVD88 - GPS NC3 HORIZONTAL: NAD83 (2011) - DENE LINEAR: U.S. SURVEY FOOT ANGULAR: DEGREES/ MINUTES/ SECONDS COORDINATE: GROUND COORDINATE
20. MONUMENTATION:	EXISTING: 4 FOUND PROPOSED: 0 TO BE SET
21. FIRE HYDRANTS:	EXISTING: 2 PROPOSED: 0
22. CLASSROOMS:	EXISTING: 70 PROPOSED: 0
23. TOTAL DISTURBED AREA:	6.15H+ ACRES OF DISTURBANCE
24. LOADING ZONES:	EXISTING: 3 BAYS PROPOSED: 0 ADDITIONAL BAYS
25. S & S PROGRAM NUMBER:	2016-118
26. ADDRESS:	301 MCKENNA'S CHURCH RD, WILMINGTON, DE 19808
27. LATITUDE / LONGITUDE:	N 39°45'28" / W 75°39'42"
28. EXISTING WETLAND AREA:	0 S.F. ±
29. DISCHARGE LOCATIONS:	THOMAS MCKEAN POINT SUBDIVISION STORMWATER POND & DELDOT STORMWATER SYSTEM ON MCKENNA CHURCH RD.

**OWNERS CERTIFICATION**  
 WE, RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT, HEREBY CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT. AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCE ON THIS COVERSHEET.

MARCIN MICHALSKI, MANAGER OF FACILITIES AND MAINTENANCE DATE

**ENGINEERS CERTIFICATION**  
 I, CHRISTOPHER DUKE, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

CHRISTOPHER DUKE P.E. NO. 16378 DATE

**THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A NEW FIELD HOCKEY AND SOFTBALL FIELD, AS WELL AS MODIFY THE EXISTING FIELD INSIDE THE TRACK TO A COMPETITION SOCCER FIELD ALONG WITH A NEW HANDICAP ACCESS RAMP.**

**STABILIZATION AND SEEDING NOTES : SEE SHEET C-507 FOR DETAILS**

- PERMANENT SEEDING :
  - SHALL BE CONDUCTED YEAR AROUND.
  - SEED BED PREPARATION : SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.
  - SOIL AMENDMENTS : FERTILIZER AND LIME APPLICATION SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.
  - SEEDING : APPLY MIX NO. 7 IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 2 OF 4. APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, GULP PACKER SEEDER OR HYDROSEEDER. ALL SEED WILL BE APPLIED AT THE RECOMMENDED RATE AND PLANTING DEPTH.
  - MULCH : IMMEDIATELY AFTER SEEDING, UNIFORMLY MULCH ENTIRE AREA WITH STRAW AT A RATE OF 2 TONS PER ACRE MINIMUM. ALL MULCHING SHALL BE DONE IN ACCORDANCE WITH DETAIL DE-ESC-3.4.5.
  - TOPSOIL : ALL AREAS TO BE PERMANENTLY SEEDED SHALL HAVE A MINIMUM OF 4" OF TOPSOIL.
- TEMPORARY STABILIZATION :
  - PROVIDE SEED BED SAME AS 1-B ABOVE.
  - APPLY MIX NO. 5 (ANNUAL RYEGRASS) IN ACCORDANCE WITH DETAIL DE-ESC-3.4.3, SHEET 1 OF 4.
  - MULCH SAME AS 1-E ABOVE.
- IF TEMPORARY STABILIZATION IS REQUIRED, PERMANENT SEEDING SHALL BE PERFORMED AS SOON AS POSSIBLE.
- ALL FILL SLOPE AREAS SHOWN ON PLAN ARE TO BE STABILIZED AS PER STATEMENT 1 OR 2 ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
- EROSION CONTROL MATTING IS REQUIRED ON ALL SLOPES OF 3:1 OR GREATER AND IN AREAS OF CONCENTRATED FLOW. USE TYPE SSM-II NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL.

**AREA OF DISTURBANCE**

AREA: 6.15 Ac

**SHEET INDEX**

C-500	STORMWATER MANAGEMENT COVER SHEET
C-501	SCHEMATIC CONSTRUCTION SITE STORMWATER PLAN
C-502	PRE-CONSTRUCTION STORMWATER MANAGEMENT PLAN
C-503	PRE-CONSTRUCTION STORMWATER MANAGEMENT PLAN
C-504	CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
C-505	CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
C-506	EROSION & SEDIMENT CONTROL DETAILS
C-507	EROSION & SEDIMENT CONTROL DETAILS

**EROSION & SEDIMENT CONTROL LEGEND**

AT GRADE INLET PROTECTION		IP-1
CONCRETE WASHOUT STATION		CWS
CONCRETE MORTAR MIXING STATION		CMO
STABILIZED CONSTRUCTION ENTRANCE		SCE
ROCK OUTLET PROTECTION		ROP
STONE CHECK DAM		S.C.D.
LIMIT OF DISTURBANCE		L.O.D.
SILT FENCE		SF

**LEGEND**

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONCRETE CURB & GUTTER			SANITARY GRAVITY SEWER LINE, SIZE & FLOW DIRECTION		
CONCRETE SIDEWALK, SLAB / PAVING			SANITARY SEWER FORCE MAIN, SIZE & FLOW DIRECTION		
IMPERVIOUS SURFACED ROAD, DRIVE OR LOT			SANITARY SEWER MANHOLE (S.M.H.)		
INDIVIDUAL TREE OR BUSH			WATER MAIN & SIZE		
EVERGREEN / DECIDUOUS			FIRE HYDRANT		
WIRE FENCE			WATER VALVE (W.V.) OR METER (W.M.)		
CHANLINK FENCE			STORM DRAIN MANHOLE (S.D.M.H.)		
STOCKADE FENCE			STORM DRAIN LINE (CMP OR RCP)		
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)			CATCH BASIN		
DRAINAGE DITCH OR SWALE			UTILITY POLE W/ OVERHEAD SERVICE (TELEPHONE OR ELECTRIC OR BOTH)		
EMBANKMENT SIDESLOPES (DOWN)			UNDERGROUND ELECTRIC		
CONTOUR			UNDERGROUND TELEPHONE		
ELEVATION SPOT SHOT			UNDERGROUND GAS MAIN		
BENCH MARK			PAVEMENT TO BE REMOVED		
PROPERTY OR RIGHT-OF-WAY LINE					
CENTERLINE					
LIGHT POLE					
CONSTRUCTION NOTE					



ARCHITECTURE  
ENGINEERING

Dover, DE  
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 Dover, DE 19904  
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 Fax 302.734.7965

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Wilmington, NC

3205 Randall Parkway, Suite 211  
 Wilmington, North Carolina 28403  
 Ph. 910.341.7600  
 Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

APPLICATION NO. 2016-0584

**THOMAS  
McKEAN  
HIGH SCHOOL  
ATHLETIC  
FIELDS**

301 MCKENNA'S CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**STORMWATER  
MANAGEMENT  
PLAN**

**COVER SHEET**

ISSUE BLOCK

NO.	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID
LAYER STATE: C-500		

PROJECT NO.: 2015145.00

DATE: 11/07/16

SCALE: 1" = 100'

DRAWN BY: A.P.C. | PROJ. MGR.: C.D.D.

SHEET

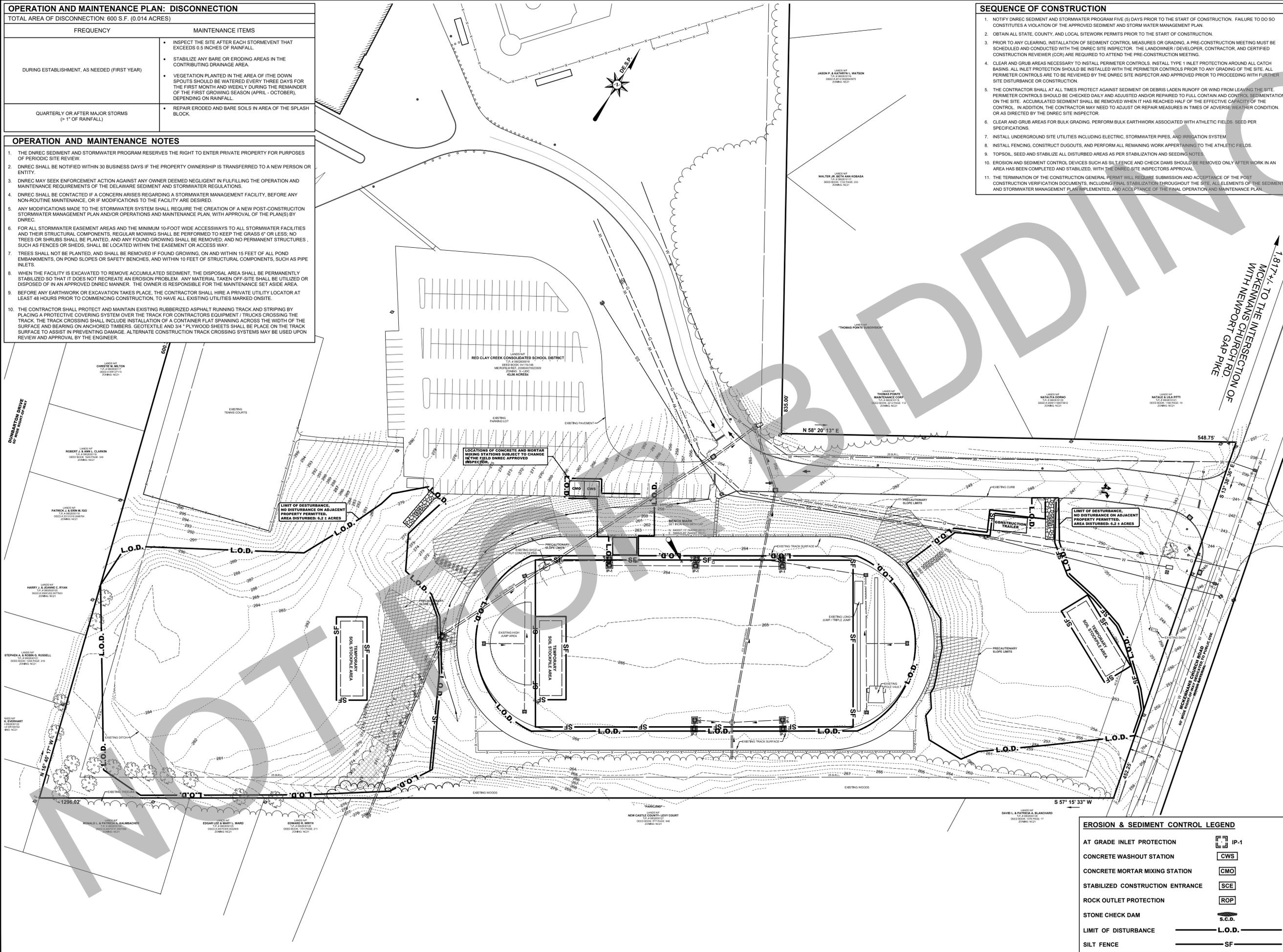
**C-500**

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OPERATION AND MAINTENANCE PLAN: DISCONNECTION	
TOTAL AREA OF DISCONNECTION: 600 S.F. (0.014 ACRES)	
FREQUENCY	MAINTENANCE ITEMS
DURING ESTABLISHMENT, AS NEEDED (FIRST YEAR)	<ul style="list-style-type: none"> <li>INSPECT THE SITE AFTER EACH STORMEVENT THAT EXCEEDS 0.5 INCHES OF RAINFALL.</li> <li>STABILIZE ANY BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA.</li> <li>VEGETATION PLANTED IN THE AREA OF THE DOWN SPOUTS SHOULD BE WATERED EVERY THREE DAYS FOR THE FIRST MONTH AND WEEKLY DURING THE REMAINDER OF THE FIRST GROWING SEASON (APRIL - OCTOBER), DEPENDING ON RAINFALL.</li> </ul>
QUARTERLY OR AFTER MAJOR STORMS (> 1" OF RAINFALL)	<ul style="list-style-type: none"> <li>REPAIR ERODED AND BARE SOILS IN AREA OF THE SPLASH BLOCK.</li> </ul>

- OPERATION AND MAINTENANCE NOTES**
- THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEW.
  - DNREC SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
  - DNREC MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
  - DNREC SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
  - ANY MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY DNREC.
  - FOR ALL STORMWATER EASEMENT AREAS AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS, NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED, AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESS WAY.
  - TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
  - WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER. THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE SET ASIDE AREA.
  - BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
  - THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING RUBBERIZED ASPHALT RUNNING TRACK AND STRIPING BY PLACING A PROTECTIVE COVERING SYSTEM OVER THE TRACK FOR CONTRACTORS EQUIPMENT / TRUCKS CROSSING THE TRACK. THE TRACK CROSSING SHALL INCLUDE INSTALLATION OF A CONTAINER FLAT SPANNING ACROSS THE WIDTH OF THE SURFACE AND BEARING ON ANCHORED TIMBERS, GEOTEXTILE AND 3/4" PLYWOOD SHEETS SHALL BE PLACED ON THE TRACK SURFACE TO ASSIST IN PREVENTING DAMAGE. ALTERNATE CONSTRUCTION TRACK CROSSING SYSTEMS MAY BE USED UPON REVIEW AND APPROVAL BY THE ENGINEER.

- SEQUENCE OF CONSTRUCTION**
- NOTIFY DNREC SEDIMENT AND STORMWATER PROGRAM FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORM WATER MANAGEMENT PLAN.
  - OBTAIN ALL STATE, COUNTY, AND LOCAL SITEWORK PERMITS PRIOR TO THE START OF CONSTRUCTION.
  - PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH THE DNREC SITE INSPECTOR, THE LANDOWNER / DEVELOPER, CONTRACTOR, AND CERTIFIED CONSTRUCTION REVIEWER (CCR) ARE REQUIRED TO ATTEND THE PRE-CONSTRUCTION MEETING.
  - CLEAR AND GRUB AREAS NECESSARY TO INSTALL PERIMETER CONTROLS. INSTALL TYPE 1 INLET PROTECTION AROUND ALL CATCH BASINS. ALL INLET PROTECTION SHOULD BE INSTALLED WITH THE PERIMETER CONTROLS PRIOR TO ANY GRADING OF THE SITE. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE DNREC SITE INSPECTOR AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
  - THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULL CONTENT AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITION, OR AS DIRECTED BY THE DNREC SITE INSPECTOR.
  - CLEAR AND GRUB AREAS FOR BULK GRADING, PERFORM BULK EARTHWORK ASSOCIATED WITH ATHLETIC FIELDS. SEED PER SPECIFICATIONS.
  - INSTALL UNDERGROUND SITE UTILITIES INCLUDING ELECTRIC, STORMWATER PIPES, AND IRRIGATION SYSTEM.
  - INSTALL FENCING, CONSTRUCT DUGOUTS, AND PERFORM ALL REMAINING WORK APPERTAINING TO THE ATHLETIC FIELDS.
  - TOPSOIL, SEED AND STABILIZE ALL DISTURBED AREAS AS PER STABILIZATION AND SEEDING NOTES.
  - EROSION AND SEDIMENT CONTROL DEVICES SUCH AS SILT FENCE AND CHECK DAMS SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH THE DNREC SITE INSPECTORS APPROVAL.
  - THE TERMINATION OF THE CONSTRUCTION GENERAL PERMIT WILL REQUIRE SUBMISSION AND ACCEPTANCE OF THE POST CONSTRUCTION VERIFICATION DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, ALL ELEMENTS OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED, AND ACCEPTANCE OF THE FINAL OPERATION AND MAINTENANCE PLAN.



**BECKER MORGAN GROUP**

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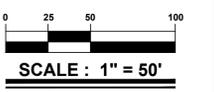
[www.beckermorgan.com](http://www.beckermorgan.com)

PROJECT TITLE  
**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

APPLICATION NO. 2016-0584

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE  
**SCHEMATIC CONSTRUCTION SITE STORMWATER PLAN**



**EROSION & SEDIMENT CONTROL LEGEND**

AT GRADE INLET PROTECTION		IP-1
CONCRETE WASHOUT STATION		CWS
CONCRETE MORTAR MIXING STATION		CMO
STABILIZED CONSTRUCTION ENTRANCE		SCE
ROCK OUTLET PROTECTION		ROP
STONE CHECK DAM		S.C.D.
LIMIT OF DISTURBANCE		L.O.D.
SILT FENCE		SF

ISSUE BLOCK

MARK	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID

LAYER STATE: C-501

PROJECT NO.: 2015145.00  
DATE: 11/07/16  
SCALE: 1" = 50'  
DRAWN BY: A.P.C. | PROJ. MGR.: C.D.D.

SHEET  
**C-501**  
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LANDS N/F  
 RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT  
 T.P. # 0802600018  
 DEED BOOK: H-115-146  
 MICROFILM REF. Z00804070023509  
 ZONING: S-UDC  
 43.56 ACRES±

LANDS N/F  
 THOMAS POINTE  
 MAINTENANCE CORP  
 T.P. # 0802610119  
 DEED BOOK: 2212 PAGE: 112  
 ZONING: NC21

LANDS N/F  
 NATALIYA DORNO  
 T.P. # 0802610120  
 DEED # 20091110073812  
 ZONING: NC21

LANDS N/F  
 NATALE & LILA PITTI  
 T.P. # 0802610121  
 DEED BOOK: 1166 PAGE: 10  
 ZONING: NC21

"PARKLAND"  
 LANDS N/F  
 NEW CASTLE COUNTY-LEVY COURT  
 T.P. # 0802630127  
 DEED BOOK: P77 PAGE: 646  
 ZONING: NC21

LANDS N/F  
 DAVID L. & PATRICIA A. BLANCHARD  
 T.P. # 0802630128  
 DEED BOOK: 1376 PAGE: 17  
 ZONING: NC21



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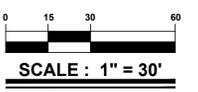
www.beckermorgan.com

PROJECT TITLE  
 APPLICATION NO. 2016-0584

### THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS

301 MCKENNANS CHURCH RD.  
 MILLCREEK HUNDRED  
 NEW CASTLE COUNTY, DE.

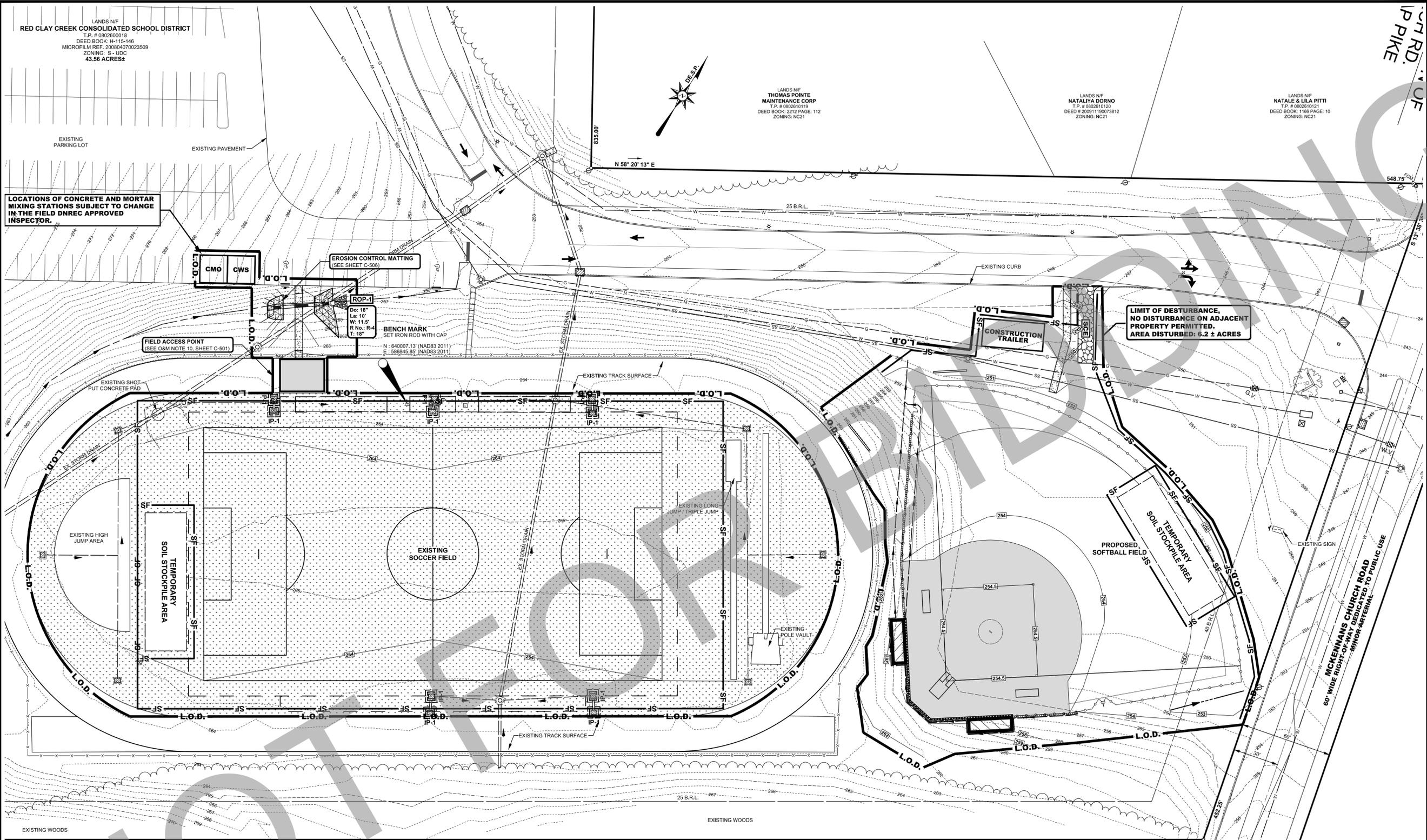
### CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN



MARK	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID
PROJECT NO.: 2015145.00		
DATE: 11/07/16		
SCALE: 1" = 30'		
DRAWN BY: A.P.C.   PROJ. MGR.: C.D.D.		

### C-504

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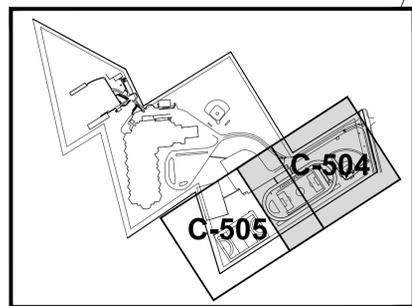


LOCATIONS OF CONCRETE AND MORTAR MIXING STATIONS SUBJECT TO CHANGE IN THE FIELD DNRCC APPROVED INSPECTOR.

LIMIT OF DISTURBANCE,  
 NO DISTURBANCE ON ADJACENT  
 PROPERTY PERMITTED.  
 AREA DISTURBED: 6.2 ± ACRES

#### EROSION & SEDIMENT CONTROL LEGEND

- AT GRADE INLET PROTECTION IP-1
- CONCRETE WASHOUT STATION CWS
- CONCRETE MORTAR MIXING STATION CMO
- STABILIZED CONSTRUCTION ENTRANCE SCE
- ROCK OUTLET PROTECTION ROP
- STONE CHECK DAM s.c.d.
- LIMIT OF DISTURBANCE L.O.D.
- SILT FENCE SF



MCKENNA CHURCH ROAD

MCKENNANS CHURCH ROAD  
 60' WIDE RIGHT-OF-WAY DEDICATED TO PUBLIC USE  
 HIGHWAY ARTERIAL

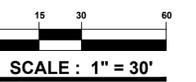
PROJECT TITLE  
APPLICATION NO. 2016-0584

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN**

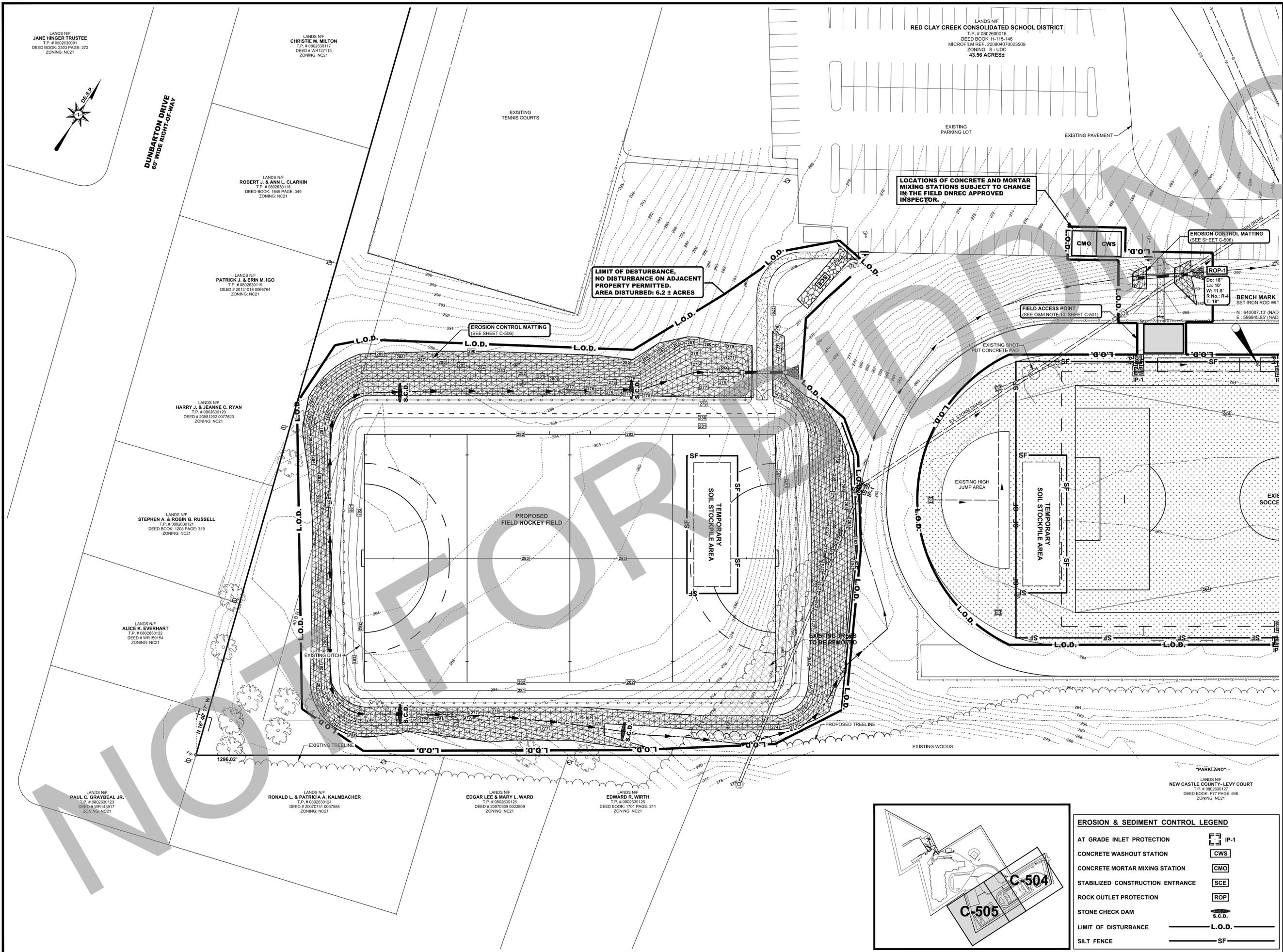


ISSUE BLOCK

MARK	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID
LAYER STATE: C-505		
PROJECT NO.:		2015145.00
DATE:		11/07/16
SCALE:		1" = 30'
DRAWN BY:		A.P.C.   PROJ. MGR.: C.D.D.

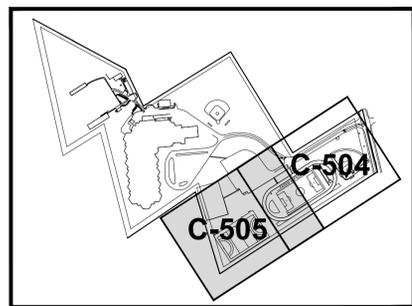
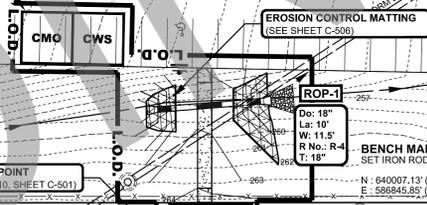
**C-505**

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LOCATIONS OF CONCRETE AND MORTAR MIXING STATIONS SUBJECT TO CHANGE IN THE FIELD DNREC APPROVED INSPECTOR.

LIMIT OF DISTURBANCE, NO DISTURBANCE ON ADJACENT PROPERTY PERMITTED. AREA DISTURBED: 6.2 ± ACRES



**EROSION & SEDIMENT CONTROL LEGEND**

AT GRADE INLET PROTECTION	IP-1
CONCRETE WASHOUT STATION	CWS
CONCRETE MORTAR MIXING STATION	CMO
STABILIZED CONSTRUCTION ENTRANCE	SCE
ROCK OUTLET PROTECTION	ROP
STONE CHECK DAM	s.c.d.
LIMIT OF DISTURBANCE	L.O.D.
SILT FENCE	SF

LANDS N/F  
JANE HINGER TRUSTEE  
T.P. # 190203001  
DEED BOOK: 2303 PAGE: 272  
ZONING: NC21

LANDS N/F  
CHRISTIE M. MILTON  
T.P. # 0802630117  
DEED # WR127115  
ZONING: NC21

LANDS N/F  
RED CLAY CREEK CONSOLIDATED SCHOOL DISTRICT  
T.P. # 0802600018  
DEED BOOK: H-115-146  
MICROFILM REF: 200804070023509  
ZONING: S-UDC  
43.56 ACRES ±

LANDS N/F  
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DEED BOOK: 1649 PAGE: 349  
ZONING: NC21

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T.P. # 0802630119  
DEED # 20131018 0066764  
ZONING: NC21

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T.P. # 0802630120  
DEED # 20081203 0077623  
ZONING: NC21

LANDS N/F  
STEPHEN A. & ROBIN G. RUSSELL  
T.P. # 0802630121  
DEED BOOK: 1208 PAGE: 319  
ZONING: NC21

LANDS N/F  
ALICE K. EVERHART  
T.P. # 0802630122  
DEED # WR159154  
ZONING: NC21

LANDS N/F  
RONALD L. & PATRICIA A. KALMBACHER  
T.P. # 0802630124  
DEED # 20070731 0067588  
ZONING: NC21

LANDS N/F  
EDGAR LEE & MARY L. WARD  
T.P. # 0802630125  
DEED # 20070309 0022809  
ZONING: NC21

LANDS N/F  
EDWARD R. WIRTH  
T.P. # 0802630126  
DEED BOOK: 1701 PAGE: 211  
ZONING: NC21



DUNBARTON DRIVE  
60' WIDE RIGHT-OF-WAY

EXISTING TENNIS COURTS

EXISTING PARKING LOT

EXISTING PAVEMENT

EROSION CONTROL MATTING  
(SEE SHEET C-506)

EROSION CONTROL MATTING  
(SEE SHEET C-506)

FIELD ACCESS POINT  
(SEE C&M NOTE 10, SHEET C-501)

EXISTING SHOT PUT CONCRETE PAD

BENCH MARK  
SET IRON ROD WIT

PROPOSED FIELD HOCKEY FIELD

TEMPORARY SOIL STOCKPILE AREA

TEMPORARY SOIL STOCKPILE AREA

EXISTING HIGH JUMP AREA

EXISTING TREELINE TO BE REMOVED

EXISTING WOODS

PROPOSED TREELINE

EXISTING DITCH

EXISTING TREELINE

LANDS N/F  
PAUL C. GRAYBEAL JR.  
T.P. # 0802630123  
DEED # WR143917  
ZONING: NC21

"PARKLAND"  
LANDS N/F  
NEW CASTLE COUNTY - LEVY COURT  
T.P. # 0802630127  
DEED BOOK: P17 PAGE: 646  
ZONING: NC21

**Standard Detail & Specifications**  
**Construction Site Waste Mgt & Spill Control**

**DATA TO BE PROVIDED:**  
Volume of Potential Pollution  
Height of containment  
Area of containment  
Volume of containment

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.1**  
Detail No. DE-ESC-3.4.1  
Sheet 1 of 5  
Date: 03/13

**Standard Detail & Specifications**  
**Construction Site Waste Mgt & Spill Control**

**Pollution Prevention - Spill Prevention**

- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
- Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
- Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
- Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
- Place a "Fueling Area" sign next to each fueling area.
- Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
- Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
- Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
- If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

**CLEAN UP SPILLS**

- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
- Do not bury spills or wash them down with water.

**LEAKS AND DRIPS**

- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
- Do not allow oil, grease, fuel or chemicals to drip onto the ground.
- Have spill kits and clean up material on-site.
- Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
- Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
- Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.1**  
Detail No. DE-ESC-3.4.1  
Sheet 2 of 5  
Date: 03/13

**Standard Detail & Specifications**  
**Construction Site Waste Mgt & Spill Control**

**Notes:**  
The Construction Site Pollution Prevention Plan should include the following elements:

- Material Inventory**  
Document the storage and use of the following materials:  
a. Concrete  
b. Detergents  
c. Paints (enamel and latex)  
d. Cleaning solvents  
e. Pesticides  
f. Wood scraps  
g. Fertilizers  
h. Petroleum based products
- Good housekeeping practices**  
a. Store only enough product required to do the job.  
b. All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.  
c. Substances shall not be mixed.  
d. When possible, all of a product shall be used up prior to disposal of the container.  
e. Manufacturers' instructions for disposal shall be strictly adhered to.  
f. The site foreman shall designate someone to inspect all BMPs daily.
- Waste management practices**  
a. All waste materials shall be collected and stored in securely lidged dumpsters in a location that does not drain to a waterbody.  
b. Waste materials shall be salvaged and/or recycled whenever possible.  
c. The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.4.1**  
Detail No. DE-ESC-3.4.1  
Sheet 3 of 5  
Date: 03/13

**Standard Detail & Specifications**  
**Construction Site Waste Mgt & Spill Control**

**Notes (cont.)**

- Trash shall be disposed of in accordance with all applicable Delaware laws.
- Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
- If fertilizer bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.
- Equipment maintenance practices**  
a. If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.  
b. If performed on-site, vehicles shall be washed with high-pressure water spray without detergent in an area contained by an impervious berm.  
c. Drip pans shall be used for all equipment maintenance.  
d. Equipment shall be inspected for leaks on a daily basis.  
e. Washout from concrete trucks shall be disposed of in a temporary pit for hardening and proper disposal.  
f. Fuel nozzles shall be equipped with automatic shut-off valves.  
g. All used products such as oil, antifreeze, solvents and tires shall be disposed of in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- Spill prevention practices**  
a. Potential spill areas shall be identified and contained in covered areas with no connection to the storm drain system.  
b. Warning signs shall be posted in hazardous material storage areas.  
c. Preventive maintenance shall be performed on all tanks, valves, pumps, pipes and other equipment as necessary.  
d. Low or non-toxic substances shall be prioritized for use.

Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.4.1**  
Detail No. DE-ESC-3.4.1  
Sheet 4 of 5  
Date: 03/13

**Standard Detail & Specifications**  
**Construction Site Waste Mgt & Spill Control**

**Notes (cont.)**

- Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.
- Education**  
a. Best management practices for construction site pollution control shall be a part of regular progress meetings.  
b. Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

**CONTACT INFORMATION**  
DNREC 24-Hour Toll Free Number 800-662-8802  
DNREC Solid & Hazardous Waste Branch 302-739-9403

Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.4.1**  
Detail No. DE-ESC-3.4.1  
Sheet 5 of 5  
Date: 03/13

**Standard Detail & Specifications**  
**Concrete Washout**

**DATA TO BE PROVIDED:**  
Length, Width, Depth, Area

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **CW**  
Detail No. DE-ESC-3.6.2  
Sheet 1 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Concrete Washout**

**Construction Notes:**

- Locate washout area a minimum of 50 feet from open channels, storm drain inlets, wetlands or waterbodies.
- Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
- Minimum dimensions for prefabricated units are 4 feet by 4 feet by 1 foot deep with a minimum 4 mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 6 feet by 6 feet by 3 feet deep, with a minimum 10 mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
- The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overlap with sandbags or concrete blocks to hold in place.
- Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to its location.
- Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
- Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **CW**  
Detail No. DE-ESC-3.6.2  
Sheet 2 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Stabilization Matting - Slope**

**Construction Notes:**

- Prepare soil before installing matting, including application of lime, fertilizer, and seed.
- Begin at the top of the slope by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact trench after staking.
- Roll the mats (A) down or (B) horizontally across the slope.
- The edges of parallel mats must be stapled with approx. 2" overlap.
- When mats must be spliced down the slope, place mats end over end (shingle style) with approx. 4" overlap. Staple through overlapped area, approx. 12" apart.

Source: Adapted from North American Green, Inc.  
Symbol: **SM-S**  
Detail No. DE-ESC-3.4.6.1  
Sheet 1 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Stabilization Matting - Slope**

**Stapling Patterns**

Source: Adapted from North American Green, Inc.  
Symbol: **SM-S**  
Detail No. DE-ESC-3.4.6.1  
Sheet 2 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Concrete Mixing Operation**

Source: Adapted from MN/DOT Concrete Manual, Chap. 4  
Symbol: **CMO**  
Detail No. DE-ESC-3.6.3  
Sheet 1 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Concrete Mixing Operation**

**Construction Notes:**

- Locate concrete mixing and containment area a minimum of 50 feet from open channels, storm drain inlets, wetlands or waterbodies.
- Locate concrete mixing and containment area so that it is accessible to telescopic lifts (service with a minimum 10 foot wide gravel or paved accessway), but so it is not in a highly active construction area causing accidental damage.
- Minimum volume for installed containment areas are 3.5 cubic feet per cubic foot of mixing capacity. The installed containment area must encompass the storage silo and mixing unit, and be surrounded on three sides minimum by a 12" high stone berm (DE #57) or 18" compost log.
- The 10-mil poly liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. The liner shall cover the perimeter control and be secured on the backside using cement or sand bags, or keyed into the ground a minimum of 6".
- Allow cementitious waste to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
- Apply a new liner before reusing the station for additional mixing after maintenance has occurred.

Source: Adapted from MN/DOT Concrete Manual, Chap. 4  
Symbol: **CMO**  
Detail No. DE-ESC-3.6.3  
Sheet 2 of 2  
Date: 03/13

**Standard Detail & Specifications**  
**Stabilized Construct. Entrance**

Source: Adapted from VA ESC Handbook  
Symbol: **SCE**  
Detail No. DE-ESC-3.4.7  
Sheet 1 of 2  
Date: 12/05

**Standard Detail & Specifications**  
**Stabilized Construct. Entrance**

**Construction Notes:**

- Stone size - Use DE #3 stone.
- Length - As required, but not less than 50 feet (exception on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than size (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Geotextile - Type GS-1 placed over the entire area prior to placing of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source: Adapted from VA ESC Handbook  
Symbol: **SCE**  
Detail No. DE-ESC-3.4.7  
Sheet 2 of 2  
Date: 12/05

PROJECT TITLE

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**EROSION & SEDIMENT CONTROL DETAILS**

ISSUE BLOCK

NO.	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID

MARK DATE DESCRIPTION

PROJECT NO.: 2015145.00

DATE: 11/07/16

SCALE: NTS

DRAWN BY: A.P.C. PROJ. MGR.: C.D.D.

SHEET

**C-506**

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### Standard Detail & Specifications Inlet Protection - Type 1

**Plan**

**Section A-A**

Attach GD-II geotextile fabric securely to 2"x4" wood frame — provides overlap at least section

Top frame required

Flanking height

2"x4" wood frame wire mesh backing, all 4 sides

Inlet

NOTE: Pre-manufactured inlet protection devices such as Silt-Saver™, or equivalent, are an acceptable substitute under this standard.

Source: Adapted from Erosion Draw Manual J. McCullough & Assoc. Symbol: **IP-1** Detail No. **DE-ESC-3.1.5.1** Sheet 1 of 2 Date: 12/03

### Standard Detail & Specifications Inlet Protection - Type 1

**Construction Notes:**

- Excavate completely around inlet to a depth of 18" below grade elevation.
- Drive 2" x 4" post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2" x 4" frame using overlap joint shown. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.
- Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
- Stretch geotextile fabric tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet grade elevation. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
- Backfill around inlet in compacted 6" layers until at least 12" of geotextile fabric is buried.
- If the inlet is not in a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 6" higher than the top of frame (weir).
- This structure must be inspected frequently and the filter fabric replaced when clogged.

**Materials:**

- Wooden frame is to be constructed of 2" x 4" construction grade lumber.
- Wire mesh must be of sufficient strength to support filter fabric with water fully impounded against it.
- Geotextile fabric: Type GD-II

Source: Adapted from Erosion Draw Manual J. McCullough & Assoc. Symbol: **IP-1** Detail No. **DE-ESC-3.1.5.1.2** Sheet 2 of 2 Date: 12/03

### Standard Detail & Specifications Silt Fence

**Section**

**Plan**

Min. 42" stake length

Reinforcing strip over geosynthetic fabric (Typ.)

Flow

Min. 24" stake length above ground

Min. 16" stake length driven into ground

Embed fabric min. 6" vertically into ground

6' Max.

2" x 2" wooden post (Typ.)

DATA: Max. controlled slope

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **SF** Detail No. **DE-ESC-3.1.2.1** Sheet 2 of 2 Date: 6/05

### Standard Detail & Specifications Silt Fence

**Construction Detail**

**Top**

Staples

Method for joining continuous sections

**Construction Notes:**

- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and lapped.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

**Materials:**

- Staples: Steel (either T or U) or 2" x 2" hardwood
- Geosynthetic fabric: Type GD-I
- Reinforcing strip: Wooden lath, plastic strip or other approved equivalent
- Prefabricated Unit: Geotab, Enviroforce, or approved equivalent

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **SF** Detail No. **DE-ESC-3.1.2.1** Sheet 2 of 2 Date: 6/05

### Standard Detail & Specifications Stone Check Dam

**Profile**

Min. 12" thick layer of DE No. 57 stone

R-4 Riprap

**Section**

Geotextile fabric for permanent check dams

L (Min. 4')

Y (Min. 12')

**Plan**

Flow

L (Min. 4')

NOTE: Angle ends upstream

DATA: Slope (S), Spacing (X), Length of weir (L), Height of stone (Y)

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **SCD** Detail No. **DE-ESC-3.3.6** Sheet 1 of 2 Date: 6/05

### Standard Detail & Specifications Stone Check Dam

**Construction Notes:**

- Swales and channels shall be prepared in accordance with the construction specifications described in the **Standards and Specifications for Temporary Berm, Temporary Swale, Vegetated Channel, or Diversion**.
- The check dam shall be constructed of 4" to 6" riprap. The riprap shall be placed so that it completely covers the width of the channel.
- The top of the check dam shall be constructed so that the center is approximately 6" lower than the outer edges, forming a weir that the water can flow across. The minimum length of weir shall be 4'.
- The maximum height of the check dam at the center of the weir must not exceed two (2) feet.
- Maximum spacing between dams should be the distance in the channel where the toe of the upstream dam is of the same elevation as the top of the downstream dam. See **Standard & Specifications for Check Dams** for design chart.

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **SCD** Detail No. **DE-ESC-3.3.6** Sheet 2 of 2 Date: 6/05

### Standard Detail & Specifications Riprap Outlet Protection - 1

**Plan**

**Section A-A**

NOTE: Depress centerline of apron slightly to prevent undercutting

Type GD-II geotextile fabric

NOTE: Key into exist. and

DATA: Pipe diameter (D<sub>p</sub>), Apron length (L<sub>a</sub>), Apron width (W), Riprap size (R No.), Riprap thickness (T)

$T_w < 0.5 D_p$

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **ROP-1** Detail No. **DE-ESC-3.3.10.1** Sheet 1 of 2 Date: 6/05

### Standard Detail & Specifications Riprap Outlet Protection - 1

**Construction Notes:**

- The subgrade for the riprap shall be prepared to the required limits and grades as shown on the plan. Any fill required in this subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The riprap shall conform to the grading limits as shown on the plan.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 18". If the damage is extensive, replace the entire filter cloth.
- Stones for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

Source: Adapted from MD Sds. & Specs. for ESC Symbol: **ROP-1** Detail No. **DE-ESC-3.3.10.1** Sheet 2 of 2 Date: 6/05

### Standard Detail & Specifications Soil Stockpile

**Plan View**

Stockpile entrance to be located on the upslope side, if needed

3' separation (min.)

Perimeter Control (i.e., Silt Fence)

**Section A-A**

Stabilize per temporary vegetation specifications

Max. height: 20' (17' on residential lot)

Install perimeter control per specification

DATA TO BE PROVIDED: Max. Height, h

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3 Symbol: **SP** Detail No. **DE-ESC-3.7.3** Sheet 1 of 2 Date: 03/13

### Standard Detail & Specifications Soil Stockpile

**Construction Notes:**

- Locate stockpiles so that they are 50 feet from any storm drain inlet, open channel, wetland or waterbody. Redirect any concentrated flow around the stockpile using an approved erosion and sediment control measure.
- Secure the perimeter of the stockpile with an approved erosion and sediment control perimeter device.
- If stockpile is to remain inactive for more than 14 calendar days, the stockpile must be vegetated. Follow the temporary vegetation specifications. The vegetation chosen shall last the duration of the stockpile; the stockpile shall be restabilized if the temporary vegetation dies or erodes results.

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3 Symbol: **SP** Detail No. **DE-ESC-3.7.3** Sheet 2 of 2 Date: 03/13

### Standard Detail & Specifications Vegetative Stabilization

No. #	Species <sup>1</sup>	Seeding Rate <sup>2</sup>	Optimum Seeding Dates <sup>3</sup>												Remarks			
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
1	Grass Seed	100																
2	Grass Seed	100																
3	Grass Seed	100																
4	Grass Seed	100																
5	Grass Seed	100																
6	Grass Seed	100																
7	Grass Seed	100																
8	Grass Seed	100																
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16	Grass Seed	100																
17	Grass Seed	100																
18	Grass Seed	100																
19	Grass Seed	100																
20	Grass Seed	100																

Source: Delaware ESC Handbook Symbol: **SP** Detail No. **DE-ESC-3.4.3** Sheet 1 of 4 Date: 12/03

### Standard Detail & Specifications Vegetative Stabilization

Seeding Method	Seeding Rate <sup>2</sup>	Optimum Seeding Dates <sup>3</sup>												Remarks				
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
1	100																	
2	100																	
3	100																	
4	100																	
5	100																	
6	100																	
7	100																	
8	100																	
9	100																	
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12	100																	
13	100																	
14	100																	
15	100																	
16	100																	
17	100																	
18	100																	
19	100																	
20	100																	

Source: Delaware ESC Handbook Symbol: **SP** Detail No. **DE-ESC-3.4.3** Sheet 2 of 4 Date: 12/03

### Standard Detail & Specifications Vegetative Stabilization

Seeding Method	Seeding Rate <sup>2</sup>	Optimum Seeding Dates <sup>3</sup>												Remarks				
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
1	100																	
2	100																	
3	100																	
4	100																	
5	100																	
6	100																	
7	100																	
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15	100																	
16	100																	
17	100																	
18	100																	
19	100																	
20	100																	

Source: Delaware ESC Handbook Symbol: **SP** Detail No. **DE-ESC-3.4.3** Sheet 3 of 4 Date: 12/03

### Standard Detail & Specifications Vegetative Stabilization

**Construction Notes:**

- Site Preparation
  - Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
  - Final grading and shaping is not necessary for temporary seedings.
- Seedbed Preparation
  - It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large rocks, roots, and other objectionable material. The soil surface should not be compacted or crusted.
- Soil Amendments
  - Lime - Apply liming materials based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
  - Fertilizer - Apply fertilizer based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soil.
- Seeding
  - For temporary stabilization, select a mixture from Sheet 1. For a permanent stabilization, select a mixture from Sheet 2 or Sheet 3 depending on the conditions.
  - Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
  - Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
- Mulching
  - All mulching shall be done in accordance with detail **DE-ESC-3.4.5**.

Source: Delaware ESC Handbook Symbol: **SP** Detail No. **DE-ESC-3.4.3** Sheet 4 of 4 Date: 12/03

PROJECT TITLE

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**EROSION & SEDIMENT CONTROL DETAILS**

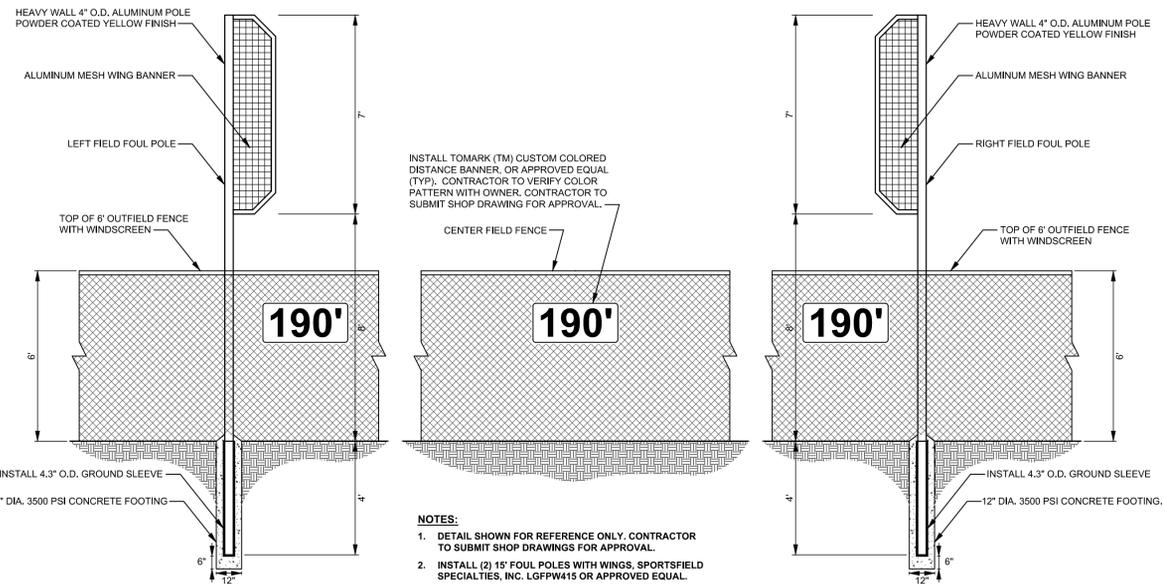
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1 2-22-2017 ISSUE FOR BID  
MARK DATE DESCRIPTION  
LAYER STATE C-507

PROJECT NO.: 2015145.00  
DATE: 11/07/16  
SCALE: NTS

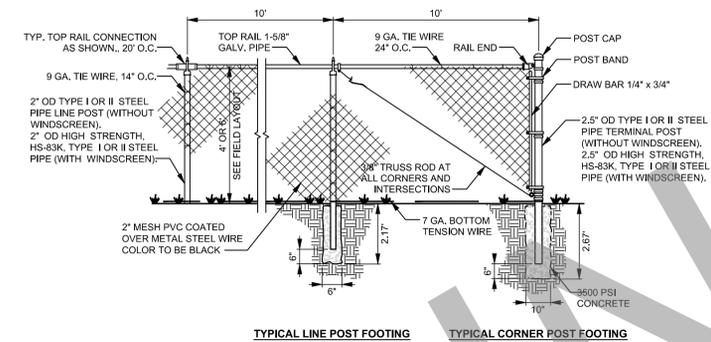
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**FOUL POLE DETAIL - 19' OVERALL HEIGHT**

NO SCALE

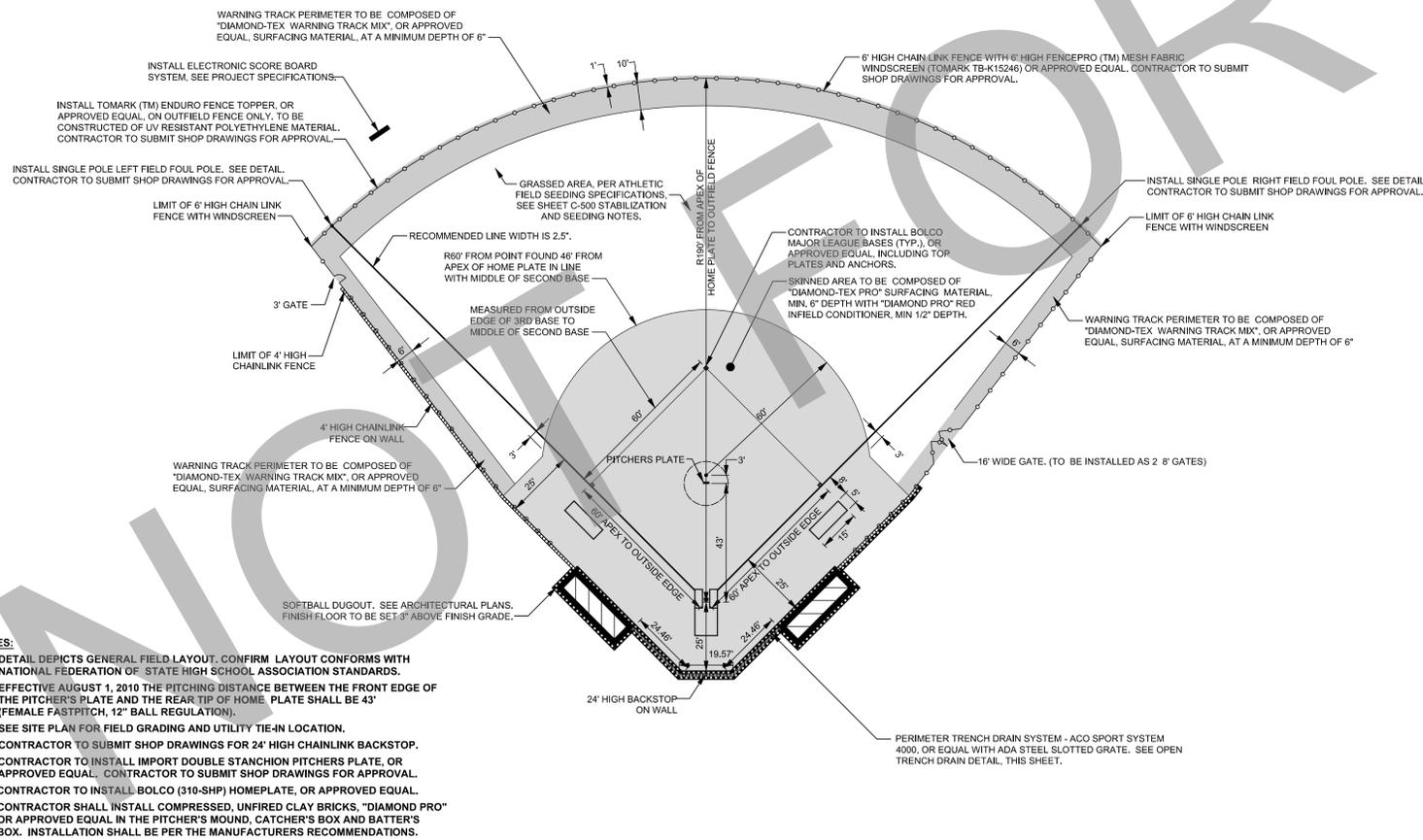


**NOTES:**

1. FENCE POSTS SHALL BE INSTALLED ON OUTSIDE PERIMETER OF FENCE.
2. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL FENCE MATERIAL SHALL BE VINYL PVC COATED OVER METAL. COLOR TO BE BLACK
4. SEE SOFTBALL FIELD LAYOUT FOR FENCE HEIGHT LOCATIONS.

**4' & 6' CHAINLINK FENCE DETAIL**

NO SCALE

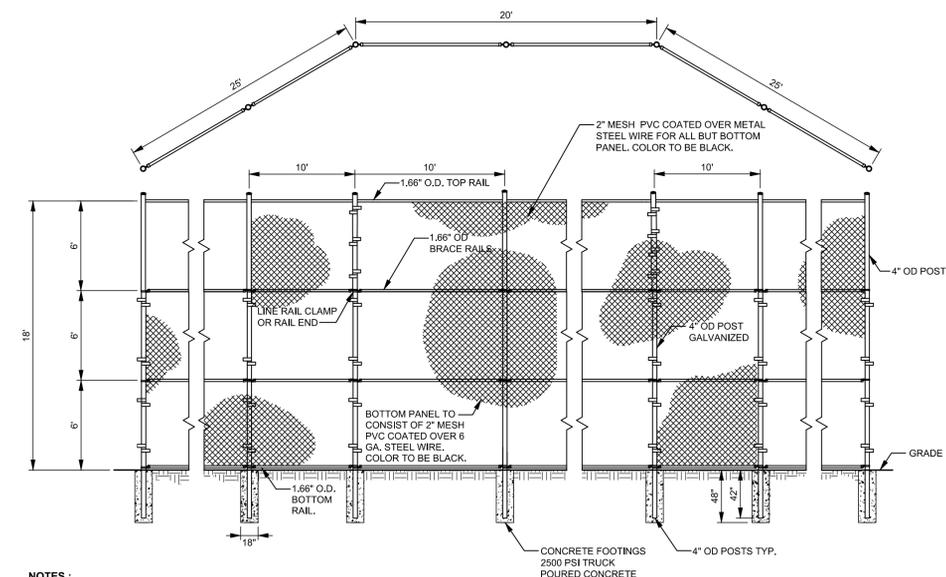


**NOTES:**

1. DETAIL DEPICTS GENERAL FIELD LAYOUT. CONFIRM LAYOUT CONFORMS WITH NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATION STANDARDS.
2. EFFECTIVE AUGUST 1, 2010 THE PITCHING DISTANCE BETWEEN THE FRONT EDGE OF THE PITCHER'S PLATE AND THE REAR TIP OF HOME PLATE SHALL BE 43' (FEMALE FASTPITCH, 12' BALL REGULATION).
3. SEE SITE PLAN FOR FIELD GRADING AND UTILITY TIE-IN LOCATION.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR 24' HIGH CHAINLINK BACKSTOP.
5. CONTRACTOR TO INSTALL IMPORT DOUBLE STANCHION PITCHERS PLATE, OR APPROVED EQUAL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.
6. CONTRACTOR TO INSTALL BOLCO (310-SHP) HOMEPLATE, OR APPROVED EQUAL.
7. CONTRACTOR SHALL INSTALL COMPRESSED, UNFIRED CLAY BRICKS, "DIAMOND PRO" OR APPROVED EQUAL IN THE PITCHER'S MOUND, CATCHER'S BOX AND BATTER'S BOX. INSTALLATION SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS.

**COMPETITION SOFTBALL FIELD LAYOUT**

1" = 30'



**NOTES:**

1. LINE POSTS TO BE PLACED EVERY TEN FEET.

**SOFTBALL BACKSTOP DETAIL**

NO SCALE

PROJECT TITLE

**THOMAS MCKEAN HIGH SCHOOL ATHLETIC FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**CONSTRUCTION DETAILS**

ISSUE BLOCK

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1	2-22-2017	ISSUE FOR BID

PROJECT NO.: 2015145.00

DATE: 11/07/16

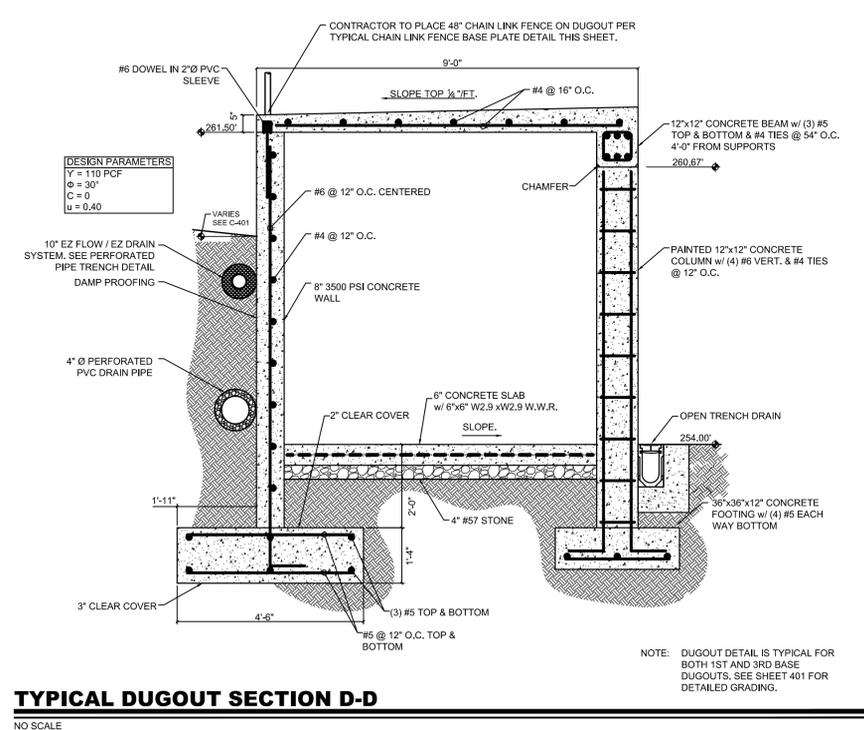
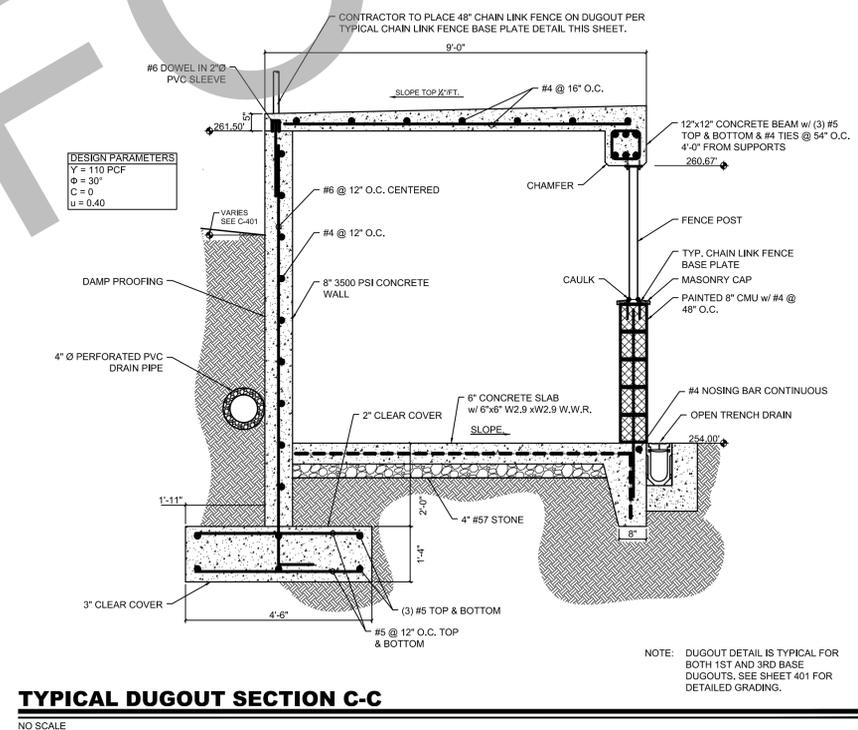
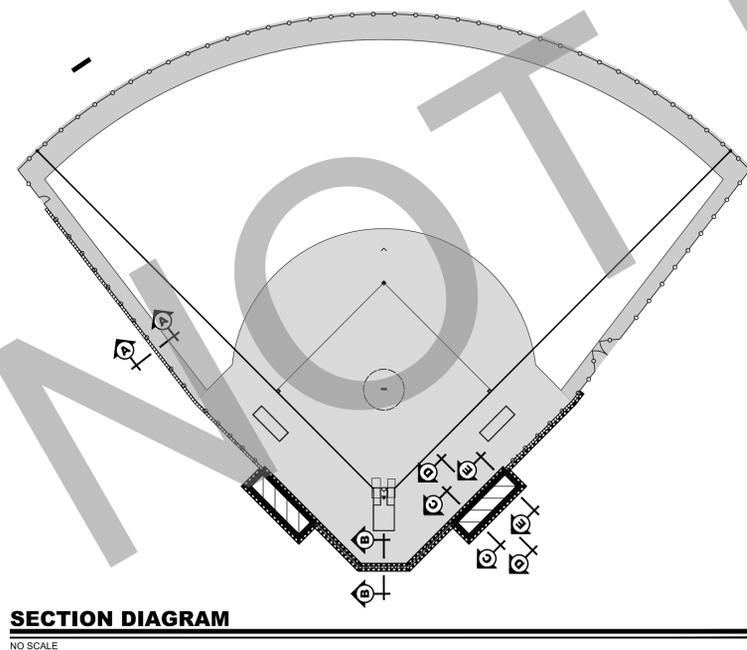
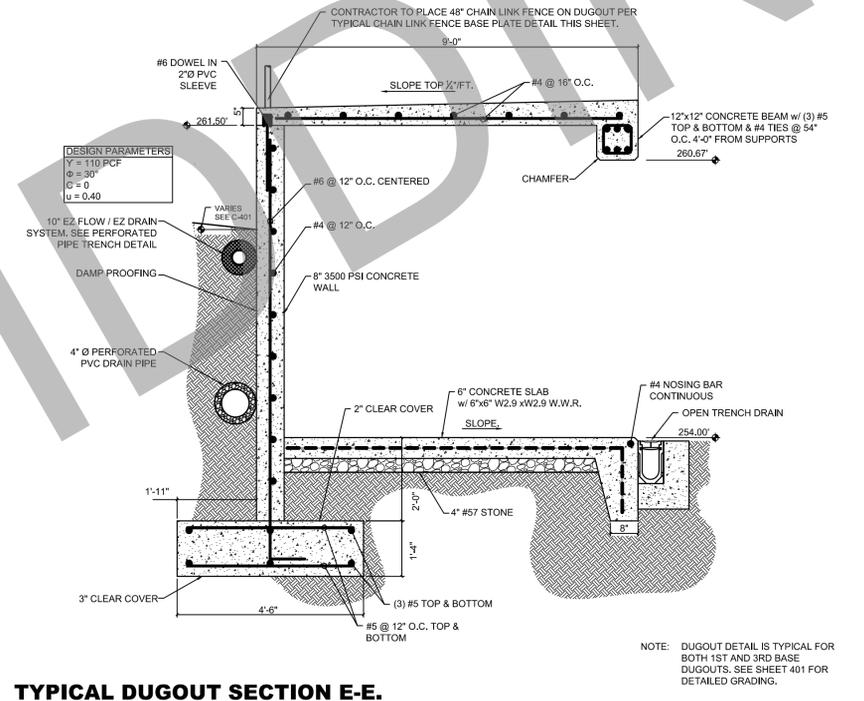
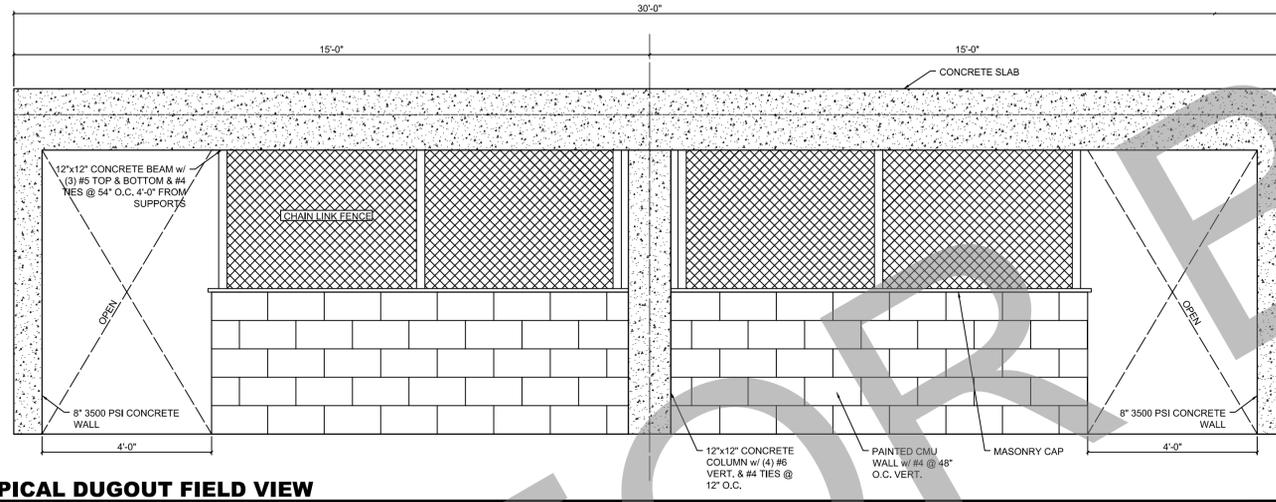
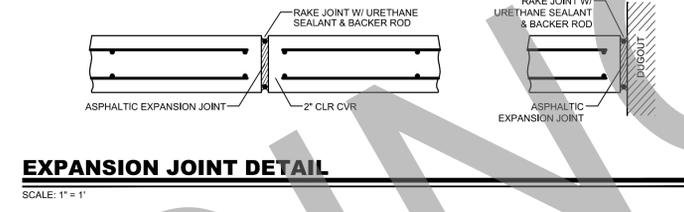
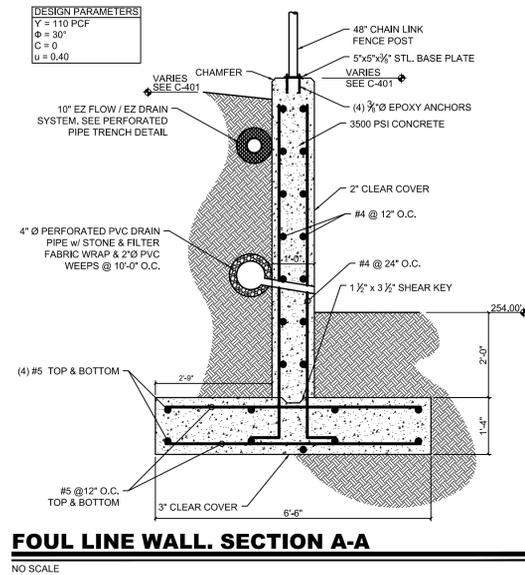
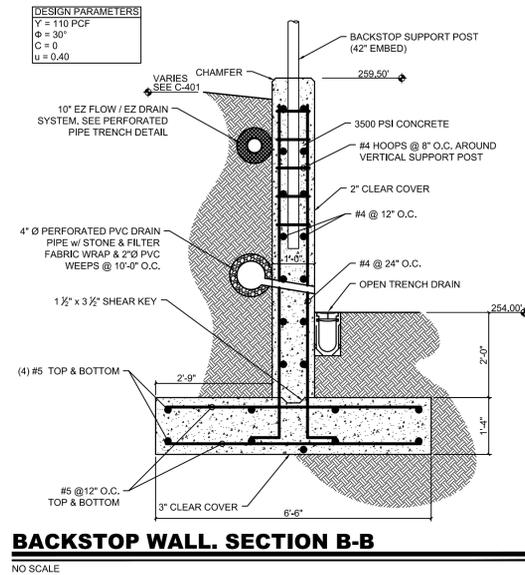
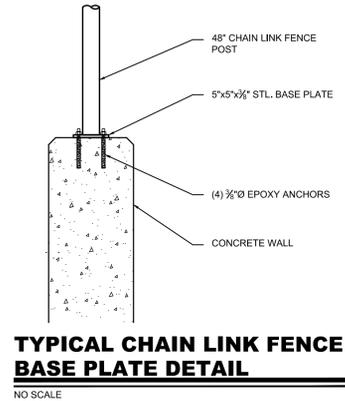
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**C-902**

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PROJECT TITLE

**THOMAS  
McKEAN  
HIGH SCHOOL  
ATHLETIC  
FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**CONSTRUCTION  
DETAILS**

ISSUE BLOCK

MARK	DATE	DESCRIPTION
1	2-22-2017	ISSUE FOR BID

PROJECT NO.: 2015145.00

DATE: 11/07/16

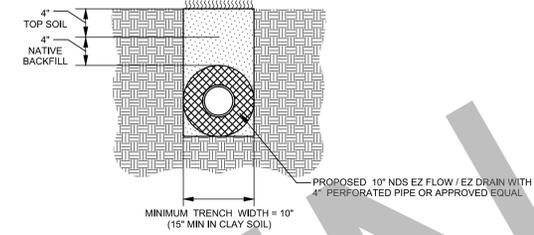
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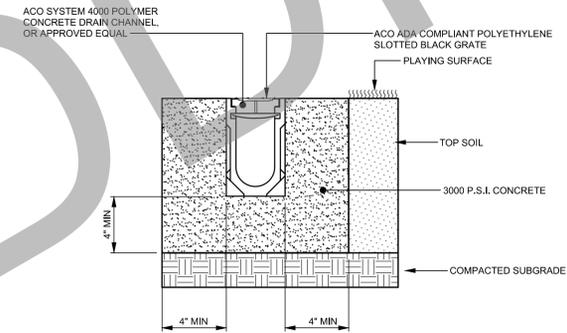
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**PERFORATED PIPE TRENCH DETAIL**

SCALE: 1" = 1'

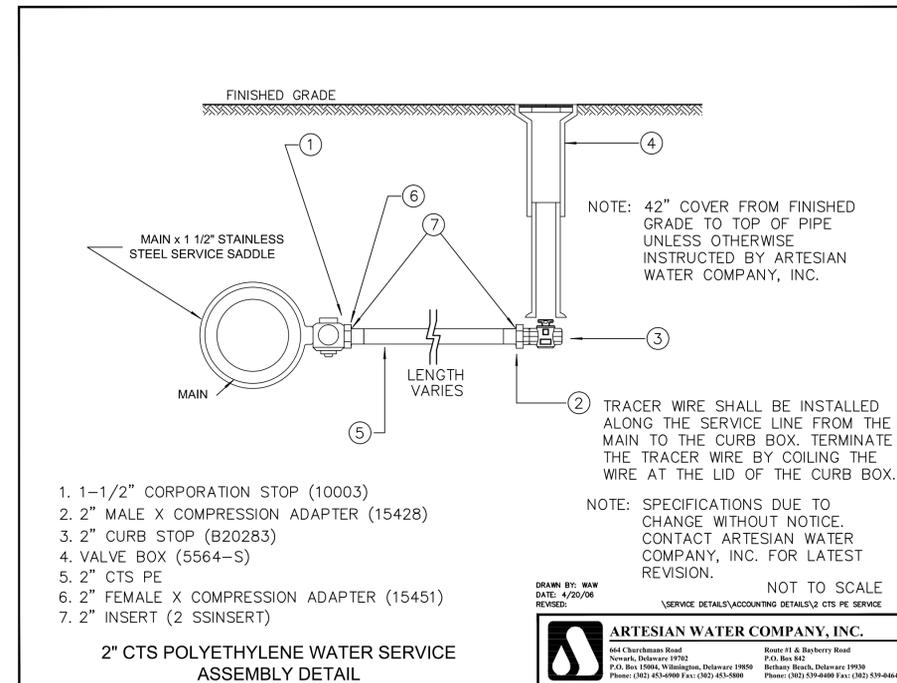


**NOTES:**

1. ACO SYSTEM 4000 SLOPED CHANNEL, OR APPROVED EQUAL WITH ADA STEEL SLOTTED GRATE SHALL BE INSTALLED ALONG DUGOUTS AND BACKSTOP WALL AS SHOWN ON THE PLANS.

**OPEN TRENCH DRAIN DETAIL**

NO SCALE



PROJECT TITLE

**THOMAS  
McKEAN  
HIGH SCHOOL  
ATHLETIC  
FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE

**CONSTRUCTION  
DETAILS**

ISSUE BLOCK

1 2-22-2017 ISSUE FOR BID

MARK DATE DESCRIPTION

LAYER/STATE: C-904

PROJECT NO.: 2015145.00

DATE: 11/07/16

SCALE: NTS

DRAWN BY: A.P.C. PROJ. MGR.: C.D.D.

SHEET

**C-904**

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**BASIC ELECTRICAL REQUIREMENTS:**

- GENERAL: ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2014 NATIONAL ELECTRICAL CODE (NEC) AND NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED. ALL ELECTRICAL WORK SHALL COMPLY WITH ADA RECOMMENDATIONS. ALL ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER BY A LICENSED ELECTRICIAN, OR A CERTIFIED APPRENTICE WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICIAN, USING THE BEST METHODS KNOWN TO THE TRADE AND SHALL PRESENT A NEAT AND PROFESSIONAL APPEARANCE WHEN COMPLETED. THE OWNER RESERVES THE RIGHT TO CHANGE, WITHOUT ADDITIONAL COST, THE LOCATION OF ANY APPARATUS OR OUTLET, PROVIDED SUCH CHANGE DOES NOT ADD MORE THAN 10 FT TO THE FEEDER AND IS ORDERED BEFORE INSTALLATION OF THE AFFECTED PORTION OF THE WORK IS COMMENCED. CONTRACTOR SHALL BRING ALL CONFLICTS ON THE DRAWINGS TO THE OWNER'S ATTENTION FOR HIS RESOLUTION. SUCH RESOLUTION SHALL BE IMPLEMENTED WITH OUT COST TO THE OWNER.
- THE CONTRACTOR SHALL SURVEY THE PROJECT SITE PRIOR TO THE BID TO ASSESS ACTUAL FIELD CONDITIONS. FAILURE TO PERFORM THIS INSPECTION BINDS THE CONTRACTOR TO PERFORM THE WORK WITH OUT EXTRA CHARGES DESPITE THE IGNORANCE OF REASONABLY ANTICIPATED CONDITIONS.
- ROUGH-INS: THE CONTRACTOR SHALL VERIFY AND COORDINATE THE ROUGH-IN REQUIREMENTS OF EACH ITEM OF EQUIPMENT WITH THE CONTRACTOR SUPPLYING THE EQUIPMENT.
- INSTALLATION: THE ELECTRICAL DRAWINGS INDICATE THE EXTENT AND GENERAL LOCATION AND ARRANGEMENT OF EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT EQUIPMENT AND MATERIALS WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE. THE CONTRACTOR SHALL SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS. COMPLY WITH THE FOLLOWING REQUIREMENTS:
  - VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS.
  - COORDINATE ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER COMPONENTS AND TRADES.
  - SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATION OF ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS FOR EFFICIENT FLOW OF THE WORK.
  - INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS TO CONFORM WITH APPROVED SUBMITTAL DATA TO THE GREATEST EXTENT POSSIBLE. CONFORM TO THE ARRANGEMENTS INDICATED ON THE ELECTRICAL DRAWINGS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE ARCHITECT/ENGINEER OR OWNER'S REPRESENTATIVE FOR RESOLUTION.
  - IN GENERAL, INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO SCOREBOARD.
- CUTTING AND PATCHING: ALL ELECTRICAL WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE, AND WHERE TRENCHING AND UNDERGROUND WORK IS NECESSARY FOR THE PROPER INSTALLATION, SUPPORT, OR ANCHORAGE OF CONDUIT OR OTHER ELECTRICAL WORK, THIS WORK SHALL BE CAREFULLY DONE. ANY RESULTING DAMAGE TO EXISTING UTILITIES OR SYSTEMS SHALL BE REPAIRED BY SKILLED MECHANICS OF THE TRADES INVOLVED, AT NO ADDITIONAL COST TO THE OWNER.
- RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AT THE SITE A CLEAN, UNDATED SET OF BLUE- OR BLACK-LINE WHITE PRINTS OF CONTRACT DRAWINGS. THIS RECORD SET OF CONTRACT DRAWINGS SHALL BE MARKED TO SHOW THE ACTUAL UNDERGROUND INSTALLATION ROUTE. MARK RECORD DRAWINGS WITH A RED ERASABLE PENCIL.
- PROTECTION OF INSTALLED SYSTEMS, EQUIPMENT, AND MATERIALS: PROTECT INSTALLED SYSTEMS, EQUIPMENT, AND MATERIALS FROM DAMAGE UNTIL FINAL ACCEPTANCE BY THE OWNER. REPAIR OR REPLACE, AT NO ADDITIONAL COST TO THE OWNER, DAMAGED SYSTEMS, EQUIPMENT, AND MATERIALS TO THE SATISFACTION OF THE ARCHITECT/ENGINEER AND/OR OWNER.
- CERTIFICATIONS: THE FOLLOWING SHALL BE OBTAINED AND SUBMITTED TO THE OWNER PRIOR TO FINAL PAYMENT:
  - ELECTRICAL SYSTEMS: A CERTIFICATE OF FINAL INSPECTION AND APPROVAL BY THE AUTHORITIES HAVING JURISDICTION.
- GUARANTEE: THE CONTRACTOR SHALL SUBMIT A WRITTEN GUARANTEE TO THE OWNER, PRIOR TO FINAL PAYMENT, THAT WARRANTS THE INSTALLATION SHALL REMAIN FREE OF DEFECTS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE OWNER. THE GUARANTEE SHALL STATE THAT THE OWNER IS NOT LIABLE FOR PARTS AND LABOR COSTS INCURRED BY THE CONTRACTOR IN THE REPAIR OF ACTUAL PRODUCT OR INSTALLATION DEFECTS.

**ELECTRICAL MATERIALS:**

- RACEWAYS:
  - RIGID GALVANIZED STEEL (RGS) CONDUIT: ANSI C80.1
  - PVC SCHEDULE 40.
  - LIQUIDTIGHT FLEXIBLE METAL CONDUIT: UL 360. FLEXIBLE STEEL CONDUIT WITH PVC JACKET.
- WIRES AND CABLES:
  - CONDUCTOR MATERIAL: ANNEALED COPPER.
  - INSULATION: THHN/THWN CONFORMING TO WC 5.
  - CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID; CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. MC & NM CABLE IS PERMITTED FOR BRANCH CIRCUITRY, AND SHALL UTILIZE SOLID CONDUCTORS.
  - GROUND CONDUCTORS #10 AWG AND SMALLER SHALL HAVE GREEN THHN/THWN INSULATION.
- GROUNDING:
  - GROUNDING AND BONDING PRODUCTS: OF TYPES INDICATED AND/OR OF SIZES AND RATINGS TO COMPLY WITH THE NEC. WHERE TYPES, SIZES, RATINGS, AND QUANTITIES ARE IN EXCESS OF NEC REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS AND THE GREATER SIZE, RATING, AND QUANTITY INDICATIONS SHALL GOVERN.
  - CONDUCTOR MATERIAL: COPPER.
  - WIRE AND CABLE CONDUCTORS: CONFORM TO NEC TABLE 8, EXCEPT AS OTHERWISE INDICATED, FOR CONDUCTOR PROPERTIES, INCLUDING STRANDING.
  - CONNECTOR PRODUCTS: UL LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED.
- PANELBOARDS:
  - CIRCUIT BREAKERS: PROVIDE TYPE, RATING, AND FEATURES INDICATED. BOLT-ON EXCEPT WHERE PLUG-IN FOR USE ON EXISTING PANELBOARDS (NOT BEING UPGRADED) TANDEM CIRCUIT BREAKERS SHALL NOT BE USED. MULTIPOLAR CIRCUIT BREAKERS SHALL HAVE AN INTERNAL COMMON TRIP AND A SINGLE HANDLE. MATCH EXISTING MANUFACTURER.
- DISCONNECTS:
  - FUSIBLE SWITCH, 800A AND SMALLER: NEMA KS 1, TYPE HD, CLIPS TO ACCOMMODATE SPECIFIED FUSES, ENCLOSURE SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED, HANDLE LOCKABLE WITH TWO (2) PAD LOCKS, AND INTERLOCKED WITH COVER IN "CLOSED" POSITION. ENCLOSURES SHALL COMPLY WITH NEMA KS 1; TYPE 3 OUTDOOR LOCATIONS.

**ELECTRICAL METHODS:**

- WIRING METHODS: UNLESS OTHERWISE INDICATED, WIRING SHALL CONSIST OF CABLES AND WIRES INSTALLED IN RGS CONDUIT WHERE EXPOSED, PVC UNDERGROUND AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS. RACEWAYS SHALL BE CONCEALED UNDERGROUND, 24" MINIMUM BELOW GRADE.
- RACEWAYS: RACEWAYS SHALL BE PROVIDED WHERE INDICATED AND REQUIRED AND SHALL BE INSTALLED AS SPECIFIED BELOW, UNLESS OTHERWISE INDICATED. MINIMUM RACEWAY SIZE SHALL BE 1 IN. RGS CONDUIT SHALL BE USED FOR ALL OUTDOOR INSTALLATIONS. LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 6 FT MAXIMUM LENGTH, SHALL BE USED FOR ALL CONDUIT TERMINATIONS AT EQUIPMENT SUBJECT TO VIBRATION. BUSHINGS, MANUFACTURED FITTINGS, OR BOXES PROVIDING EQUIVALENT MEANS OF PROTECTION SHALL BE INSTALLED ON THE ENDS OF ALL CONDUITS AND SHALL BE OF THE INSULATING TYPE WHERE REQUIRED BY THE N.E.C. ONLY LISTED ADAPTERS SHALL BE USED TO CONNECT PVC TO RGS CONDUIT AND CAST METAL BOXES AND CONDUIT BODIES.
- BOXES: BOXES SHALL BE PROVIDED IN RACEWAY SYSTEMS WHEREVER REQUIRED FOR PULLING OF WIRES. BOXES SHALL BE LISTED AS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE LOCATION THEY ARE INSTALLED.
- WIRES AND CABLES: EXAMINE RACEWAYS AND BUILDING FINISHES TO RECEIVE WIRES AND CABLES FOR COMPLIANCE WITH INSTALLATION TOLERANCES AND OTHER CONDITIONS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. PULL WIRES AND CABLES INTO RACEWAY SIMULTANEOUSLY WHERE MORE THAN ONE IS BEING INSTALLED IN THE SAME RACEWAY. USE PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTORS OR INSULATION. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS THAT WILL NOT DAMAGE WIRES/CABLES OR RACEWAY.
- GROUNDING: ELECTRICAL SYSTEMS AND EQUIPMENT, METALLIC RACEWAYS AND BOXES, CABLE SHIELDS, METALLIC CABLE SHEATHS AND ARMOR, AND OTHER NON-CURRENT CARRYING METALLIC PARTS OF EQUIPMENT SHALL BE GROUNDED IN CONFORMANCE WITH THE NEC. EQUIPMENT GROUND CONDUCTORS SHALL COMPLY WITH NEC ARTICLE 250 FOR SIZES AND QUANTITIES, EXCEPT WHERE LARGER SIZES AND/OR MORE CONDUCTORS ARE INDICATED. PROVIDE SEPARATE INSULATED GROUND CONDUCTOR IN ALL RACEWAYS, REGARDLESS OF RACEWAY TYPE. SEPARATELY DERIVED SYSTEMS AS DEFINED BY THE NEC SHALL BE GROUNDED IN CONFORMANCE WITH NEC ARTICLE 250 PARA. 26. TERMINATE EQUIPMENT GROUND WIRES FOR FEEDERS AND BRANCH CIRCUITS WITH PRESSURE TYPE GROUND LUGS. WHERE METALLIC CONDUITS TERMINATE AT METALLIC HOUSINGS WITHOUT MECHANICAL AND ELECTRICAL CONNECTION TO HOUSING, TERMINATE EACH CONDUIT WITH A GROUNDING BUSHING. CONNECT GROUNDING BUSHINGS WITH A GROUND WIRE TO THE GROUND BUS IN THE HOUSING. BOND ELECTRICALLY NONCONTINUOUS CONDUITS AT BOTH ENTRANCES AND EXITS WITH GROUNDING BUSHINGS AND GROUND WIRES. TIGHTEN GROUNDING AND BONDING CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES.
- DISCONNECTS AND CIRCUIT BREAKERS: PROVIDE DISCONNECTS AND CIRCUIT BREAKERS WHERE INDICATED ON THE ELECTRICAL DRAWINGS AND/OR WHERE REQUIRED BY THE NEC, WHETHER INDICATED ON THE ELECTRICAL DRAWINGS OR NOT. INSTALL DISCONNECTS AND CIRCUIT BREAKERS PLUMB AND LEVEL AND IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. UPON COMPLETION OF INSTALLATION OF DISCONNECTS AND CIRCUIT BREAKERS, ENERGIZE CIRCUITS AND DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS. EXCEPT AS OTHERWISE INDICATED, DO NOT DEMONSTRATE DISCONNECTS AND CIRCUIT BREAKERS BY OPERATING THEM UNDER LOAD; HOWEVER, DEMONSTRATE DISCONNECT AND CIRCUIT BREAKER OPERATION THROUGH SIX OPENING/CLOSING CYCLES WITH CIRCUIT UNLOADED. OPEN DISCONNECT AND CIRCUIT BREAKER ENCLOSURES FOR INSPECTION OF INTERIOR, MECHANICAL AND ELECTRICAL CONNECTIONS, FUSE INSTALLATION IF APPLICABLE, AND FOR VERIFICATION OF TYPE AND RATING OF FUSES INSTALLED IF APPLICABLE. CORRECT DEFICIENCIES THEN RETEST TO DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REMOVE AND REPLACE DEFECTIVE UNITS WITH NEW UNITS AND RESET.

**ELECTRICAL DRAWING NOTES:**

- INSTALL (3) NEW 20AMP, 1 POLE CIRCUIT BREAKERS IN EXISTING SQUARE D LOAD CENTER LOCATED BEHIND THE SIGN ON MCKENNANS CHURCH ROAD TO SERVE THREE NEW SCORE BOARDS.
- FEED EACH NEW SCORE BOARD WITH A DEDICATED UNDERGROUND CIRCUIT CONSISTING OF (2) #8 AND (1) #8 GROUND IN 1" CONDUIT FROM EXISTING LOAD CENTER BEHIND SIGN ON MCKENNANS CHURCH ROAD. CONDUITS SHALL BE INSTALLED 24" BELOW GRADE. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO TRENCHING. INSTALL PULL BOXES AS REQUIRED. COORDINATE LOCATION OF PULLBOXES WITH CIVIL ENGINEER AND OWNER IN FIELD.
- INSTALL LOCKABLE NEMA 3R DISCONNECT SWITCH AT SCOREBOARD FOR DISCONNECTING ELECTRICAL CIRCUIT TO SCORE BOARD. PROVIDE NEW 5/8" X 10 COPPER CLAD GROUND ROD AT EACH SCOREBOARD AND GROUND SCOREBOARD USING #8 BARE SOLID COPPER CABLE. REFER TO SCORE BOARD MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR DISCONNECT MOUNTING HEIGHT, GROUNDING DETAIL AND ADDITIONAL INFORMATION.



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APPLICATION NO. 2016-0584

**THOMAS  
McKEAN  
HIGH SCHOOL  
ATHLETIC  
FIELDS**

301 MCKENNANS CHURCH RD.  
MILLCREEK HUNDRED  
NEW CASTLE COUNTY, DE.

SHEET TITLE  
**ELECTRICAL PLAN**

ISSUE BLOCK

MARK	DATE	DESCRIPTION
LATEST STATE: 22		
PROJECT NO.:	2015145.00	
DATE:	02/9/17	
SCALE:	1" = 40'	
DRAWN BY:	JCV	PROJ. MGR.: JCV
SHEET		

**E01**

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