FINAL LAND DEVELOPMENT PLAN
FOR
WHITEHALL ROAD REGIONAL PARK PHASE 1
LOCATED IN
FERGUSON TOWNSHIP, CENTRE COUNTY, PENNSYLVANIA
JUNE 6, 2019

OWNER(S) CERTIFICATION

STATE OF: PENNSYLVANIA
COUNTY OF: CENTRE

ON THIS THE_____DAY OF _____, 2019 THE UNDERSIGNED OWNER PERSONALLY APPEARED BEFORE ME AND CERTIFIED THAT THEY WERE THE OWNERS OF THE PROPERTIES SHOWN ON THIS PLAN AND ACKNOWLEDGE THE SAME TO BE THEIR ACT AND PLAN AND DESIGNS, THE SAME TO BE RECORDED AS SUCH ACCORDING TO THE LAW.

_____ BY _____
OWNER

WITNESS MY HAND AND SEAL, THIS DATE _____

_____
NOTARY PUBLIC

TOWNSHIP PLANNING COMMISSION

FERGUSON TOWNSHIP PLANNING COMMISSION APPROVED

_____ DATE
CHAIRMAN

_____ DATE
SECRETARY

TOWNSHIP SUPERVISORS

FERGUSON TOWNSHIP SUPERVISORS APPROVED

_____ DATE
CHAIRMAN

_____ DATE
SECRETARY

STORMWATER FACILITIES ACKNOWLEDGMENT

I / WE_____, THE LANDOWNER(S) MY/OUR HEIRS AND ASSIGNS, ACKNOWLEDGE THE STORMWATER MANAGMENT SYSTEM TO BE A PERMANENT FACILITY WHICH CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY THE FERGUSON TOWNSHIP BOARD OF SUPERVISORS AND THAT THE STORMWATER MANAGE-MENT SYSTEM IS MAINTAINED IN ACCORDANCE WITH THE RECORDED STORMWATER MANAGEMENT OWNERSHIP AND MAINTENANCE AGREEMENT (RB _____ PG. ____).

_____ BY _____
OWNER

TOWNSHIP ENGINEER STORMWATER CERTIFICATION

I, _____, HAVE REVIEWED THIS STORMWATER MANAGEMENT PLAN IN ACCORDANCE WITH THE DESIGN STANDARDS AND CRITERIA OF THE FERGUSON TOWNSHIP STORMWATER MANGEMENT ORDINANCE.

STORMWATER CERTIFICATION

I, _____, HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE FERGUSON TOWNSHIP STORMWATER MAGANGEMENT ORDINANCE.

DESIGN ENGINEER CERTIFICATION

I, _____,HEREBY CERTIFY THAT THIS LAND DEVELOPMENT MEETS ALL DESIGN REQUIREMENTS OF THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, ZONING ORDINANCE AND ALL OTHER APPLICABLE CHAPTERS OF THE FERGUSON TOWNSHIP CODE.

FIRE MARSHALL CERTIFICATION

I HAVE REVIEWED AND HEREBY CERTIFY THAT THE LOCATION OF FIRE LANES AND FIRE HYDRANTS SHOWN ON THIS PLAN ARE ADEQUATE.

_____ _____
FIRE MARSHALL DATE

RECORDER OF DEEDS

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS,CENTRE COUNTY, PENNSYLVANIA, IN PLAN BOOK_____, PAGE_____ THIS THE _____DAY OF _____, 20____.

_____
RECORDER OF DEEDS

ZONING APPLICATION DATE

ZONING APPLICATION DATE FOR THIS LAND DEVELOPMENT PLAN:

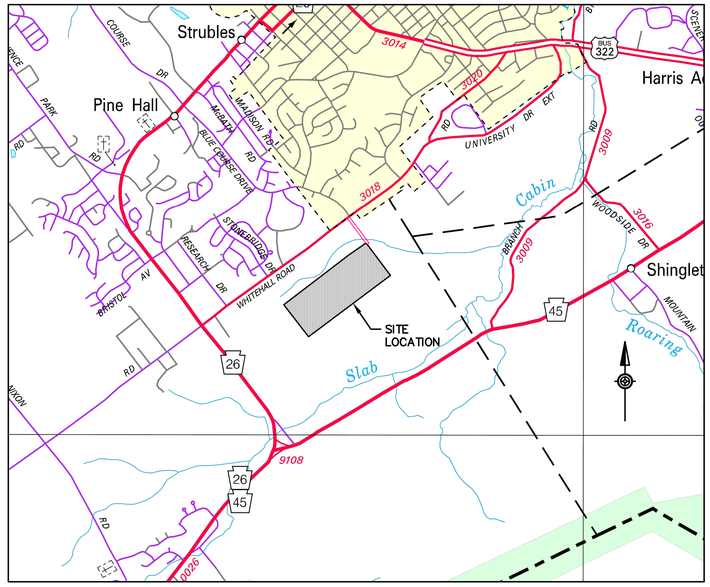
_____
DATE OF APPLICATION

RECORD PLAN

THIIS RECORD PLAN CONFORMS WITH THE PLAN RECEIVING FINAL APPROVAL BY THE FERGUSON TOWNSHIP BOARD OF SUPERVISORS ON _____, ALL IMPROVEMENTS ARE OR WILL BE INSTALLED IN ACCORDANCE WITH SUCH PLAN IN A MANNER AND TIME SO SPECIFIED THEREIN. (CHAPTER 22, SECTION 403.Q)

PROJECT NARRATIVE:

WHITEHALL ROAD REGIONAL PARK PHASE 1 INCLUDES THE SITE LAYOUT, GRADING, UTILITY INSTALLATION, AND STORMWATER MANAGEMENT FOR APPROXIMATELY 54.20 ACRES OF THE 100 ACRE PROPERTY. THIS PROJECT WILL PROVIDE THE FOLLOWING AMENITIES: 4 RECTANGULAR GRASS PLAYING FIELDS (TWO OF THE FIELDS ARE DESIGNED WITH SYNTHETIC TURF AS AN ALTERNATE), TWO GRASS PRACTICE FIELDS, ALL SEASON PAVILION (CONCESSIONS, RESTROOMS, GATHERING AREA), PLAYGROUND, PARK STORAGE BUILDING, GRAVEL TRAIL NETWORK, PAVED ENTRANCE DRIVEWAY, CONCRETE SIDEWALKS, AND TWO PARKING LOTS AND LANDSCAPING. THERE IS AN EXISTING WOODED AREA THAT WILL BE RETAINED ON THE SITE. STORMWATER MANAGEMENT WILL CONSIST OF FOUR PRIMARY STORMWATER MANAGEMENT AREAS AND NUMEROUS VEGETATED SWALES, RAIN GARDENS, AND UNDERDRAINS THROUGHOUT THE PARK. THE GRAVEL WALKING TRAIL IS OVER 2 MILES IN LENGTH AND LOCATED AROUND THE PERIMETER AND THROUGHOUT THE PARK, AND WILL ALSO PROVIDE A FUTURE EXTENSION TO THE MUSSER GAP TRAIL NETWORK. FUTURE PHASES FOR WHITEHALL ROAD REGIONAL PARK WILL REQUIRE SUBSEQUENT LAND DEVELOPMENT REVIEW AND APPROVAL BY FERGUSON TOWNSHIP.



LOCATION MAP
SCALE: 1"=2000'

SCALE
0 2000 4000 FEET

SITE INFORMATION

1. SITE INFORMATION:
   - A. OWNERS OF RECORD: THE CENTRE REGION COUNCIL OF GOVERNMENTS AND THE TOWNSHIP OF FERGUSON, 2463 GATEWAY DRIVE SUITE 3, STATE COLLEGE, PA 16801
   - B. DEVELOPER: CENTRE REGION PARKS & RECREATION AUTHORITY, 2463 GATEWAY DRIVE SUITE 1, STATE COLLEGE, PA 16801, Serving the Borough of State College and the Townships of College, Ferguson, Harris, and Patton.
   - C. SITE ADDRESS: 1954 BLUE COURSE DRIVE EXTENSION, STATE COLLEGE, PA 16801
   - D. TAX PARCEL NO.: 24-004-,094G,0000-
   - E. DEED REFERENCE: DB 2143 PG 30
   - F. ZONING: RA – RURAL AGRICULTURAL
   - G. SITE USE EXISTING: FOLLOW FARMLAND
   - H. SITE USE PROPOSED: REGIONAL PLACE OF ASSEMBLY – REGIONAL PARKLANDS; PRIMARY USE: REGIONAL PARKLANDS
   - I. PROPERTY SIZE: 100.00 ACRES (4,356,009 SF)
   - J. BUILDING SETBACKS: EXISTING: (FARMLAND): FRONT: 50' SIDE: 100' REAR: 75'; PROPOSED: (REGIONAL PLACE OF ASSEMBLY): FRONT: 20' SIDE: 30' REAR: 50'
   - K. BUILDING HEIGHTS: EXISTING: NONE; PROPOSED: 30'-0"; ALLOWABLE: 40'-0" (EXCEPTION-LIGHTING STRUCTURES FOR RECREATIONAL PLAY)
   - L. BUILDING COVERAGE: EXISTING: 0 SF (0.0%); PROPOSED: 5,390 SF (0.12%); ALLOWABLE: 30% OF LOT COVERAGE FOR PRIMARY, ADJUNCT, AND ACCESSORY STRUCTURES
   - M. IMPERVIOUS COVERAGE: EXISTING: 0 SF (0.0%); PROPOSED: 11.77 AC (11.8%); ALLOWABLE: N/A
2. PARKING INFORMATION
   - A. REQUIRED: 145 SPACES
   - B. CALCULATIONS: SEE TABLE BELOW
   - C. PROPOSED: 473 SPACES (14 HC) TOTAL: 487 SPACES
   - D. SURFACE: ASPHALT PAVEMENT & DRIVEWAY SURFACE AGGREGATE

PARKING ANALYSIS TABLE

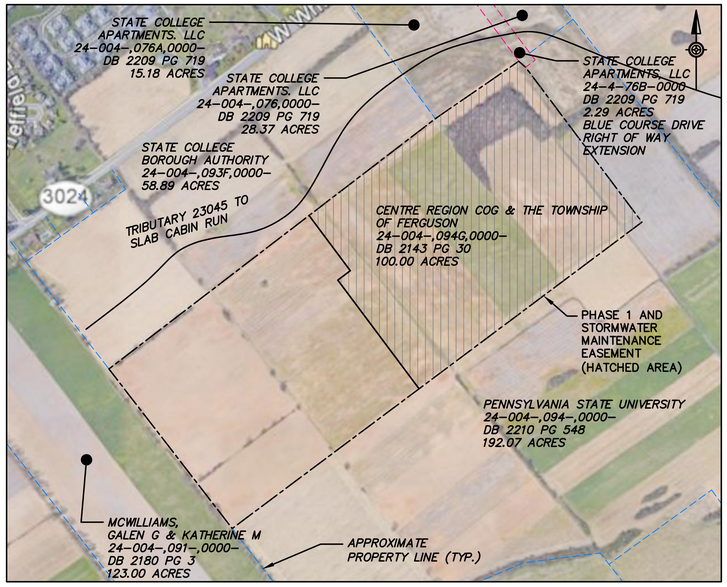
ACTIVITY/STRUCTURE	PARKING REQUIREMENTS	PARKING SPACES REQUIRED
TRAILHEAD PARKING	NONE	15
4 RECTANGULAR FIELDS	25 SPACES/EVENT	100
1 PLAYGROUND	NONE	15
1 PAVILION	1 SPACE/PICNIC TABLE	15
PARK STORAGE BUILDING	NONE	0
TOTAL		145

3. SOILS INFORMATION
   - HaB – HAGERSTOWN SILT LOAM
   - HcB – HAGERSTOWN SILTY CLAY LOAM
   - HuB – HUBLERSBURG SILT LOAM
   - OhB – OPEQUON-HAGERSTOWN COMPLEX

SHEET INDEX:

* C100 – COVER SHEET
* C101 – PHASING PLAN
* C102 – EXISTING CONDITIONS
* C103 – OVERALL SITE PLAN
  C103.1 – SITE PLAN 1
  C103.2 – SITE PLAN 2
  C103.3 – SITE PLAN 3
  C103.4 – SITE PLAN 4
* C104 – OVERALL GRADING PLAN
  C104.1 – GRADING PLAN 1
  C104.2 – GRADING PLAN 2
  C104.3 – GRADING PLAN 3
  C104.4 – GRADING PLAN 4
  C104.5 – SITE SECTIONS
  C104.6 – SITE SECTIONS
* C105 – OVERALL SITE UTILITY PLAN
  C105.1 – SITE UTILITY PLAN 1
  C105.2 – SITE UTILITY PLAN 2
  C105.3 – SITE UTILITY PLAN 3
  C105.4 – SITE UTILITY PLAN 4
  C105.5 – SITE UTILITY PROFILE
* C106 – OVERALL POST CONSTRUCTION STORMWATER MANAGEMENT
* C106.1 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 1
* C106.2 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 2
* C106.3 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 3
* C106.4 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 4
  C107 – EROSION AND SEDIMENTATION CONTROL PLAN
  C108.1 – SITE CONSTRUCTION DETAILS
  C108.2 – SITE CONSTRUCTION DETAILS
  C108.3 – SITE UTILITY DETAILS
  C108.4 – SITE UTILITY DETAILS
* C108.5 – POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
* C108.6 – POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
* C108.7 – POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
  C108.8 – EROSION AND SEDIMENTATION CONTROL DETAILS
  C108.9 – EROSION AND SEDIMENTATION CONTROL DETAILS
* L100 – LANDSCAPING PLAN
* L100.1 – SEEDING PLAN
* L101 – LANDSCAPING PLANTING LIST
* L102 – LANDSCAPING DETAILS
  E100 – SITE PLAN ELECTRICAL
  E101 – SITE PLAN LIGHTING CALCULATIONS
  E102 – SITE PLAN LIGHTING CALCULATIONS
  E500 – DETAILS ELECTRICAL

* DENOTES PLANS TO BE RECORDED.



SITE KEY MAP
SCALE: 1"=400'

SCALE
0 400 800 FEET

4. ALL TREES AND SHRUBS SHALL BE PLANTED IN ACCORDANCE WITH THE "GUIDE TO PLANTING IN FERGUSON TOWNSHIP."
5. ALL INFRASTRUCTURE RELATED TO PUBLIC SEWER SHALL BE LOCATED ENTIRELY WITHIN THE CENTRE REGION REGIONAL GROWTH BOUNDARY AND SEWER SERVICE AREA.
6. SOIL INFILTRATION RATES WERE OBTAINED THROUGH FIELD TESTING AND ANALYSIS CONDUCTED BY CMT LABORATORIES AND SUMMARIZED IN A REPORT DATED SEPTEMBER 10, 2019.
7. FOR INFORMATION ON STORMWATER MANAGEMENT REFER TO REPORT TITLED WHITEHALL ROAD REGIONAL PARK POST-CONSTRUCTION STORMWATER MANAGEMENT PREPARED BY STAHL SHEAFFER ENGINEERING, LLC DATED JUNE 6, 2019 AND LAST REVISED NOV. 14, 2019
8. FOR INFORMATION ON EROSION AND SEDIMENT CONTROL PLAN REFER TO REPORT TITLED WHITEHALL ROAD REGIONAL PARK EROSION AND SEDIMENT CONTROL NARRATIVE PREPARED BY STAHL SHEAFFER ENGINEERING, LLC DATED JUNE 6, 2019.
9. AS-BUILT PLANS ARE TO BE SUBMITTED TO THE TOWNSHIP IN ACCORDANCE WITH REQUIREMENTS AND REQUIRED PHOTO DOCUMENTATION OF CRITICAL STAGES OF CONSTRUCTION TO INCLUDE DOCUMENTATION OF CONSTRUCTION MEANS, THE INFILTRATION SURFACE PRIOR TO PLACEMENT OF AMENDED SOIL. ALSO AS-BUILT INFILTRATION TESTING IS TO BE PERFORMED AND RESULTS INCLUDED WITH THE AS-BUILT SUBMISSION. AS-BUILT INFILTRATION TESTING IS TO BE PERFORMED IN ACCORDANCE WITH 26-304.F, AND ANY CLARIFICATIONS PROVIDED AT THE PRECONSTRUCTION MEETING.
10. ON APRIL 15, 2013, THE TOWNSHIP BOARD OF SUPERVISORS APPROVED A CONDITIONAL USE FOR THE WHITEHALL ROAD REGIONAL PARK PROJECT TO BE ZONED AS A REGIONAL PACE OF ASSEMBLY.
11. ON FEBRUARY 25, 2014, THE TOWNSHIP ZONING HEARING BOARD APPROVED A VARIANCE FOR THE WHITEHALL ROAD REGIONAL PARK PROJECT TO ELIMINATE THE REQUIREMENT FOR RAISED PARKING ISLANDS WITHIN THE PARKING LOTS. THE CURRENT LAND DEVELOPMENT PLAN AS SUBMITTED ON JUNE 6, 2019 WILL NOT APPLY THIS VARIANCE TO THE PROJECT, THUS THE PARKING ISLANDS WILL BE CONSTRUCTED AS REQUIRED PER ORDINANCE. ON JULY 23, 2019, THE TOWNSHIP ZONING HEARING BOARD APPROVED A VARIANCE FOR THE WHITEHALL ROAD REGIONAL PARK PHASE 1 PROJECT TO REDUCE THE MINIUM CALIPER OF UNDERSTORY AND CANOPY TREE PLANTINGS TO A MINIMUM CALIPER SIZE OF 1".
12. THE PARKING LOT SURFACE MATERIALS INCLUDE A COMBINATION OF ASPHALT PAVED SURFACES (OUTER PERIMETER) AND COMPACTED AGGREGATE (INTERIOR). THE STORMWATER MANAGEMENT PLAN WAS DESIGNED FOR FUTURE PAVING OF THE ENTIRE PARKING LOT SURFACE.
13. PRIMARY ACCESS TO THE SITE IS PROVIDED BY THE 90' RIGHT-OF-WAY (FUTURE BLUE COURSE DRIVE EXTENSION). UNTIL SUCH TIME BLUE COURSE DRIVE EXRENSION IS CONSTRUCTED, THE EXISTING FARM LANES SHALL BE USED TO ACCESS THE PROPERTY SUBJECT TO AGREEMENT AMONGST THE OWNERS, AS RECORDED IN CENTRE COUNTY COURTHOUSE RB 2005 PG 643.

ADDITIONAL SITE FEATURES & PLANNING NOTES:
1. THERE ARE NO WETLANDS ON THE PROPERTY ACCORDING TO THE NATIONAL WETLAND INVENTORY MAPPING (U.S. FISH AND WILDLIFE SERVICE), CURRENT AS OF JANUARY 2019.
2. NO PORTION OF THE SITE IS LOCATED WITHIN A FLOODPLAIN IN ACCORDANCE WITH FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) MAP # 42027C0638F, FERGUSON TOWNSHIP, DATED MAY 4, 2009.
3. PUBLIC WATER SUPPLY FOR THE SITE WILL BE PROVIDED BY THE STATE COLLEGE BOROUGH WATER AUTHORITY. WATER LINES OUTSIDE OF THE EXTENDED BLUE COURSE DRIVE RIGHT-OF-WAY WILL BE OWNED AND MAINTAINED BY THE OWNER.
4. PUBLIC SANITARY SEWER SERVICE FOR THE SITE WILL BE PROVIDED BY THE UNIVERSITY AREA JOINT AUTHORITY. ALL SANITARY SEWER MAIN LINES ON THE SITE WILL BE OWNED AND MAINTAINED BY THE UNIVERSITY AREA JOINT AUTHORITY AND LOCATED WITHIN A 20' DEDICATED SEWER EASEMENT.
5. A SANITARY SEWER PUMP STATION WILL BE REQUIRED TO SERVICE THE PARK AND IS LOCATED ON THE EASTERN SIDE OF THE SITE. THE PUMP STATION CONSTRUCTION AND ALL ASSOCIATED PERMITTING HAS BEEN PROVIDED UNDER A PREVIOUSLY APPROVED LAND DEVELOPMENT PLAN (THE COTTAGES AT STATE COLLEGE) LOCATED ON THE ADJACENT PROPERTY LOCATED NORTHEAST OF THE SITE.
6. NO STRUCTURES, GRADING, OR LANDSCAPING MAY BE PLACED WITHIN STORMWATER MANAGEMENT AREAS WHICH WOULD IMPEDE STORMWATER FLOW OR FUNCTION OF STORMWATER MANAGEMENT FACILITIES, OR ALTER THE FLOW'S COURSE.
7. PRIMARY ACCESS TO THE SITE IS PROVIDED BY THE 90' RIGHT-OF-WAY (FUTURE BLUE COURSE DRIVE EXTENSION). UNTIL SUCH TIME THAT BLUE COURSE DRIVE EXTENSION IS CONSTRUCTED (ANTICIPATED DATE: SPRING 2020), THE EXISTING FARM LANES SHALL BE USED TO ACCESS THE SITE SUBJECT TO AGREEMENT AMONGST THE OWNERS, AS RECORDED IN CENTRE COUNTY COURTHOUSE DEED BOOK 2005, PAGE 643.

SURVEY DATA:
1. SURVEY INFORMATION OBTAINED FROM DRAWING ENTITLED "EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY" DATED 6/25/07, DRAWING # D-8725 PROVIDED BY SWEETLAND ENGINEERING & ASSOCIATES, INC. 24 HILL STREET SAYRE, PA 18840. PHONE: 570-882-9777. ADDITIONAL SURVEY INFORMATION PROVIDED BY STAHL SHEAFFER ENGINEERING, LLC, DATED 7/2/12. 301 SCIENCE PARK ROAD, SUITE 333, STATE COLLEGE, PA 16803. CONTOURS SHOWN ARE ONE FOOT INTERVALS.
2. HORIZONTAL DATUM IS PENNSYLVANIA NORTH ZONE STATE PLANE COORDINATES, NORTH AMERICAN DATUM OF 1983 (PA NAD83) U.S. FEET.
3. VERTICAL DATUM IS THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
4. THE BENCHMARK FOR THIS PROJECT IS A 3/4" REBAR SET AT THE NORTHEAST CORNER OF TAX PARCEL 24-004-,094G,0000-. PT# 103, 3/4" REBAR, NORTHING: 216838.3402, EASTING: 1935739.5284, ELEVATION: 1094.6098

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE - STOP CALL
PA1 SYSTEM, INC. 1-800-242-1776 SERIAL # 20131482036 DATE 05/28/2013

ACT 172 UTILITY INFORMATION

1. PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – BEFORE YOU DIG CALL THE PA ONE CALL SYSTEM TELEPHONE NUMBER 1-800-242-1776. PA ONE CALL SERIAL NO. 20131482036.
2. ALL UTILITY INFORMATION AND LOCATIONS SHOWN ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITY LOCATIONS SHOULD BE VERIFIED IN THE FIELD. CONTRACTOR SHALL NOTIFY PA ONE CALL (1-800-242-1776) AT LEAST 3 DAYS PRIOR TO ANY EXCAVATION.
   - ELECTRIC – WEST PENN POWER, 2800 E. COLLEGE AVE., STATE COLLEGE, PA 16801, (814) 231-5338
   - SANITARY SEWER – UNIVERSITY AREA JOINT AUTHORITY, 1576 SPRING VALLEY RD, STATE COLLEGE, PA 16801, (814) 238-5361
   - TELEPHONE – VERIZON, 224 S. ALLEN STREET, STATE COLLEGE, PA 16801, (814) 231-6528
   - WATER – STATE COLLEGE BOROUGH WATER AUTHORITY, 1201 WEST BRANCH ROAD, STATE COLLEGE, PA 16801, (814) 238-6766
   - GAS – COLUMBIA GAS OF PA, 2550 CAROLEAN DRIVE, STATE COLLEGE, PA 16801, (814) 278-5842
   - TV/CABLE – COMCAST, 60 DECIBEL ROAD, SUITE 101, STATE COLLEGE, PA 16801, (814) 238-6766
   - STORM SEWER – FERGUSON TOWNSHIP, 3147 RESEARCH DRIVE, STATE COLLEGE, PA 16801, (814) 238-4561

CENTRE REGION Parks & Recreation
2643 Gateway Drive, Suite #1
State College, PA 16801
Phone: (814) 231-3071
Fax: (814) 235-7832
www.crpr.org

STAHL SHEAFFER ENGINEERING
301 SCIENCE PARK ROAD, SUITE 333
STATE COLLEGE, PA 16803
PH: 814-689-1562
FAX: 814-689-1885
WWW.SSE-LLC.COM

Fernsler Hutchinson ARCHITECTURE LLC
521 EAST BEAVER AVENUE
STATE COLLEGE, PA 16801
t: 814-234-6806
f: 814-234-0256
e: fjfaia@aol.com

PENO ENGINEERING
MECHANICAL & ELECTRICAL CONSULTANTS
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814-234-7366

BSA LA
182 FAIRMOUNT DRIVE
LEWISBURG, PA 17837
PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248
DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

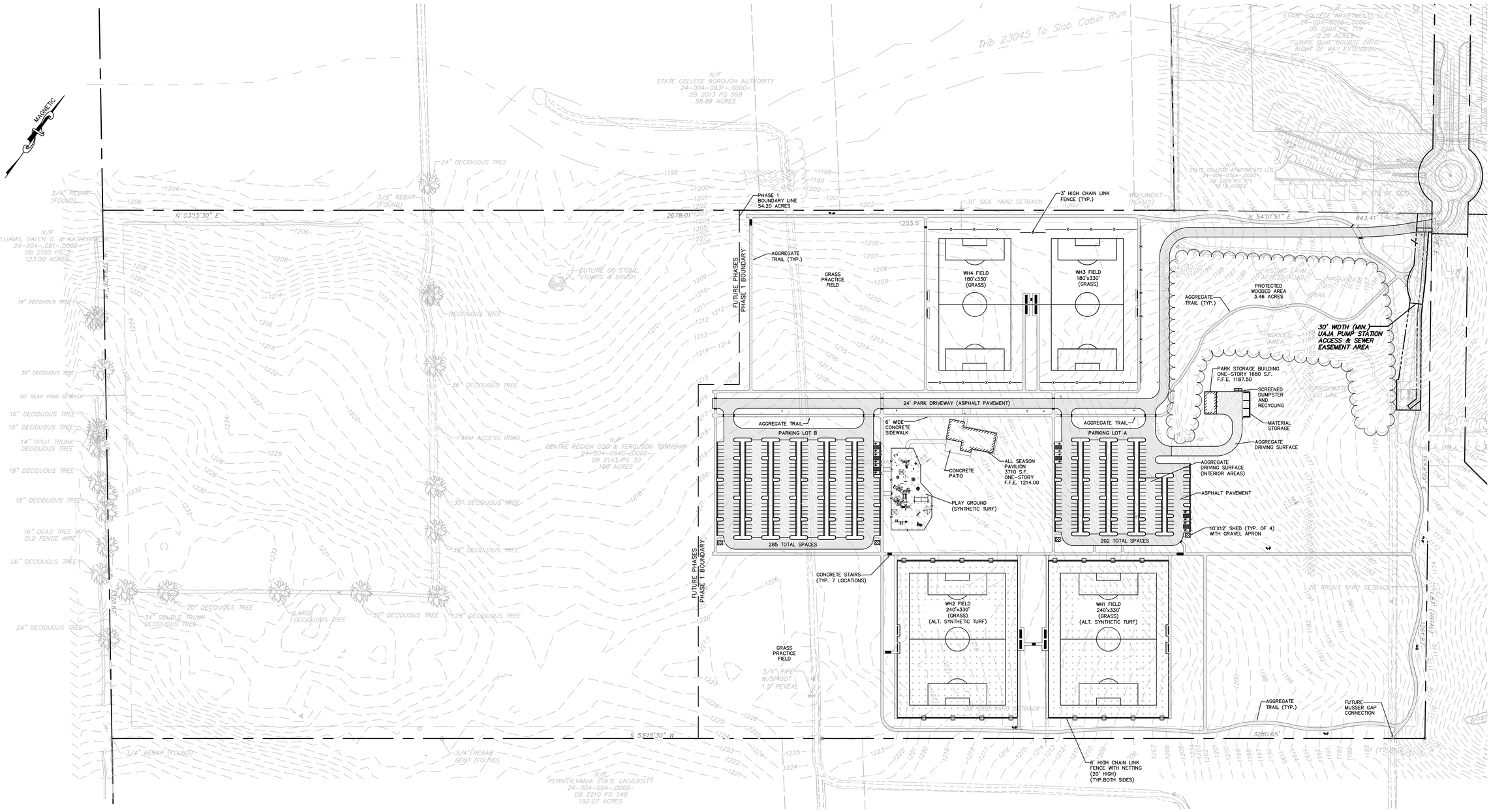
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
COVER SHEET

C100



LEGEND
EXISTING

- CONTOURS
- PROPERTY LINE
- BUILDING SETBACK LINES
- FARM ACCESS ROAD
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER FORCE MAIN
- UNDERGROUND ELECTRIC
- GAS LINE
- TREE ROW
- TREE
- SURVEY CONTROL
- EASEMENT
- SOIL BOUNDARY

LEGEND
PROPOSED

- STANDARD ASPHALT PAVEMENT
- DRIVING SURFACE AGGREGATE
- TRAIL SURFACE AGGREGATE
- CONCRETE SIDEWALK
- SYNTHETIC TURF
- LANDSCAPE ROCKS
- SAFETY FENCE/FENCE/NETTING TOTAL (20' HEIGHT)
- CHAIN LINK FENCE
- ALUMINUM PICKET FENCE
- WATER LINE
- WATER VALVE
- FIRE HYDRANT
- HOSE BIB
- DRINKING FOUNTAIN
- METER PIT
- NATURAL GAS
- SANITARY SEWER MAIN
- SANITARY SEWER MANHOLE
- STORM SEWER LINES
- STORM INLET
- STORM MANHOLE
- UNDERGROUND ELECTRIC
- UNDERGROUND ELECTRIC/CABLE/TELEPHONE
- SANITARY SEWER EASEMENT
- SANITARY SEWER MAIN W/LATERAL
- INLET PROTECTION COMPOST FILTER SOCK
- ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET ON ALL SLOPES >3:1 (TYP.)
- SWALE
- NPDES BOUNDARY
- ROCK FILTER
- STORMWATER MAINTENANCE EASEMENT
- TEST PIT

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100ft.

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SSE PROJECT No: 16-248
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REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
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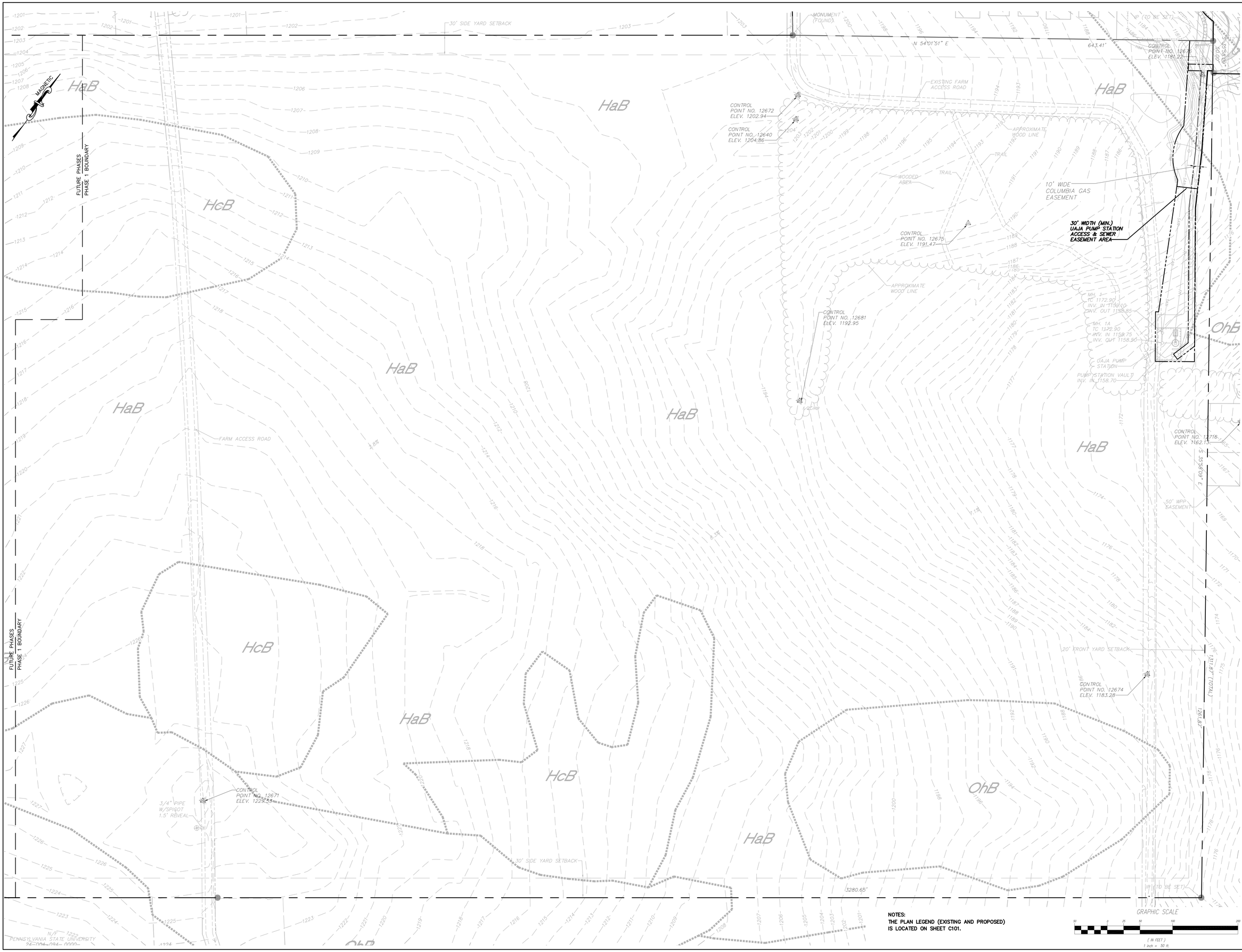
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
PHASING PLAN

C101



NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

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WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
EXISTING CONDITIONS

C102

PHASE 1 BOUNDARY LINE 54.20 ACRES

MAGNETIC

FUTURE PHASES
PHASE 1 BOUNDARY

AGGREGATE TRAIL (TYP.)

CONCRETE STAIRS

431'

432'

GRASS PRACTICE FIELD

5' R (TYP.)

30' SIDE YARD SETBACK

10'

CONCRETE STAIRS

3' HIGH CHAIN LINK FENCE (TYP.)

PROVIDE 8' GAP BETWEEN FENCES

48'

23'

23'

6'

30'

180'

101'

180'

36'

8'

47'

6'

6'

WH4 FIELD
180'x330'
(GRASS)

WH3 FIELD
180'x330'
(GRASS)

BLEACHERS (TYP.)
(NOT IN CONTRACT)

CONCRETE STAIRS

28'

24'

50'

7'

330'

PLAYER BENCHES (TYP.)
(NOT IN CONTRACT)

15 MPH SPEED LIMIT SIGN
(TYP. OF 5)

49'

24'

30'

3' HIGH CHAIN LINK FENCE (TYP.)

20'

6'

30'
R

PEDESTRIAN
CROSSING SIGN

DETECTABLE
WARNING (TYP.)

PAINTED
CROSSWALK (TYP.)

PARK DRIVEWAY

24' WIDE ASPHALT CARTWAY

20' WIDE LOADING AREA

15'
R

24'

15' R

15'

15' R

24'

5' R

FIRE LANE
NO PARKING SIGN
"15 MIN. SHORT TERM
PARKING ONLY" SIGN

10' WIDE SIDEWALK

FIRE LANE
NO PARKING
SIGN

PEDESTRIAN
CROSSING
SIGN

6' WIDE CONCRETE
SIDEWALK

10' CONCRETE
SIDEWALK

ALL SEASON
PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00

8' R

SINGLE GATE

SINGLE GATE

CONCRETE
PATIO

422'

DOUBLE GATE

PLAY GROUND (17,226 SF)
WITH SYNTHETIC TURF
(SEE PLAYGROUND PLAN SET)

4' ALUMINUM PICKET FENCE

PARKING LOT B – 285 (6 HC) SPACES

25' R

18'

6'

24'

10'

29'

60'

9 HC

AGGREGATE
DRIVING
SURFACE

46'

10'

24'

5' R

6" HIGH CONCRETE CURB AT
PARKING ISLANDS AND ENDS
(TYP. THROUGHOUT PARKING LOTS)

PARKING LOT A – 202 (8 HC) SPACES

186'

46'

4 HC

AGGREGATE
DRIVING
SURFACE

6' HIGH CHAIN LINK FENCE
WITH NETTING
(20' HIGH) (TYP. BOTH SIDES)

CONCRETE
SIDEWALK

10'X12' SHED (TYP. OF 4)
WITH GRAVEL APRON

6' HIGH CONCRETE CURB AT
PARKING ISLANDS AND ENDS
(TYP. THROUGHOUT PARKING LOTS)

CONCRETE
STAIRS
(TYP. 7 LOCATIONS)

CONCRETE
SIDEWALK

5' R (TYP.)

WH2 FIELD
240'x330'
(GRASS)
(ALTERNATE SYNTHETIC TURF)

WH1 FIELD
240'x330'
(GRASS)
(ALTERNATE SYNTHETIC TURF)

CONCRETE
STAIRS

CONCRETE
STAIRS

FINAL STRIPING PLAN
TO BE DETERMINED
BY OWNER

CONCRETE
STAIRS

CONCRETE
SIDEWALK

6' AGGREGATE
PERIMETER

ALTERNATE:
6" WIDE CONCRETE
PERIMETER CURB
FLUSH TO GRADE

3' AGGREGATE
PERIMETER

3' AGGREGATE
PERIMETER

30' REAR YARD SETBACK

5280.65'

3/4" PIPE
W/SPIGOT
1.5' REVEAL

GRASS PRACTICE FIELD

FUTURE PHASES
PHASE 1 BOUNDARY

MONUMENT
(FOUND)

N 54°01'51" E

643.41'

CONNECT DRIVEWAY TO
EXISTING BLUE COURSE DRIVE EXTENSION
MATCH WIDTH

PEDESTRIAN
CROSSING SIGN

834' R

S 35°58'09" E

1 IP (TO BE SET)

STOP SIGN

PARK ENTRANCE SIGN

24'

50' R

EXISTING FARM
ACCESS ROAD

APPROXIMATE
WOOD LINE

TRAILS

TRAIL

WOODED
AREA

10' WIDE
COLUMBIA GAS
EASEMENT

AGGREGATE TRAIL
(TYP.)

AGGREGATE TRAIL
THROUGH WOODS TO
CONNECT WITH
EXISTING PATH.
CONTRACTOR TO LAY
OUT PATH ALIGNMENT
WITH OWNER TO
MINIMIZE TREE
CLEARANCE.

30' WIDTH (MIN.)
UAJA PUMP STATION
ACCESS & SEWER
EASEMENT AREA

APPROXIMATE
WOOD LINE

PARK STORAGE BUILDING
ONE-STORY 1680 S.F.
F.F.E. 1187.50

64'

20'

20'

SCREENED
DUMPSTER AND
RECYCLING
CONCRETE PAD

19'

64'

EXTERIOR
MATERIAL STORAGE
CONCRETE PAD

MATERIAL DIVIDERS
(NOT IN CONTACT)

BOLLARDS

25' R

40' R

AGGREGATE
DRIVING SURFACE

40'
R

64' R

24'

9.5'

19'

12'

15

14

60'

10'

UAJA PUMP
STATION

PUMP STATION VAULT
INV. 1158.70

50' WPP
EASEMENT

60.85 S.F.

20' FRONT YARD SETBACK

1311.87' (TOTAL)

1261.87'

SEE LANDSCAPING PLAN
FOR PLANTING AND
SEEDING PLAN (TYP.)

AGGREGATE TRAIL (TYP.)

TO FUTURE
MUSSER GAP
CONNECTION

(TO BE SET)

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED)
IS LOCATED ON SHEET C101.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

CENTRE REGION Parks & Recreation
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BSA LA
182 FAIRMOUNT DRIVE
LEWISBURG, PA 17837
PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

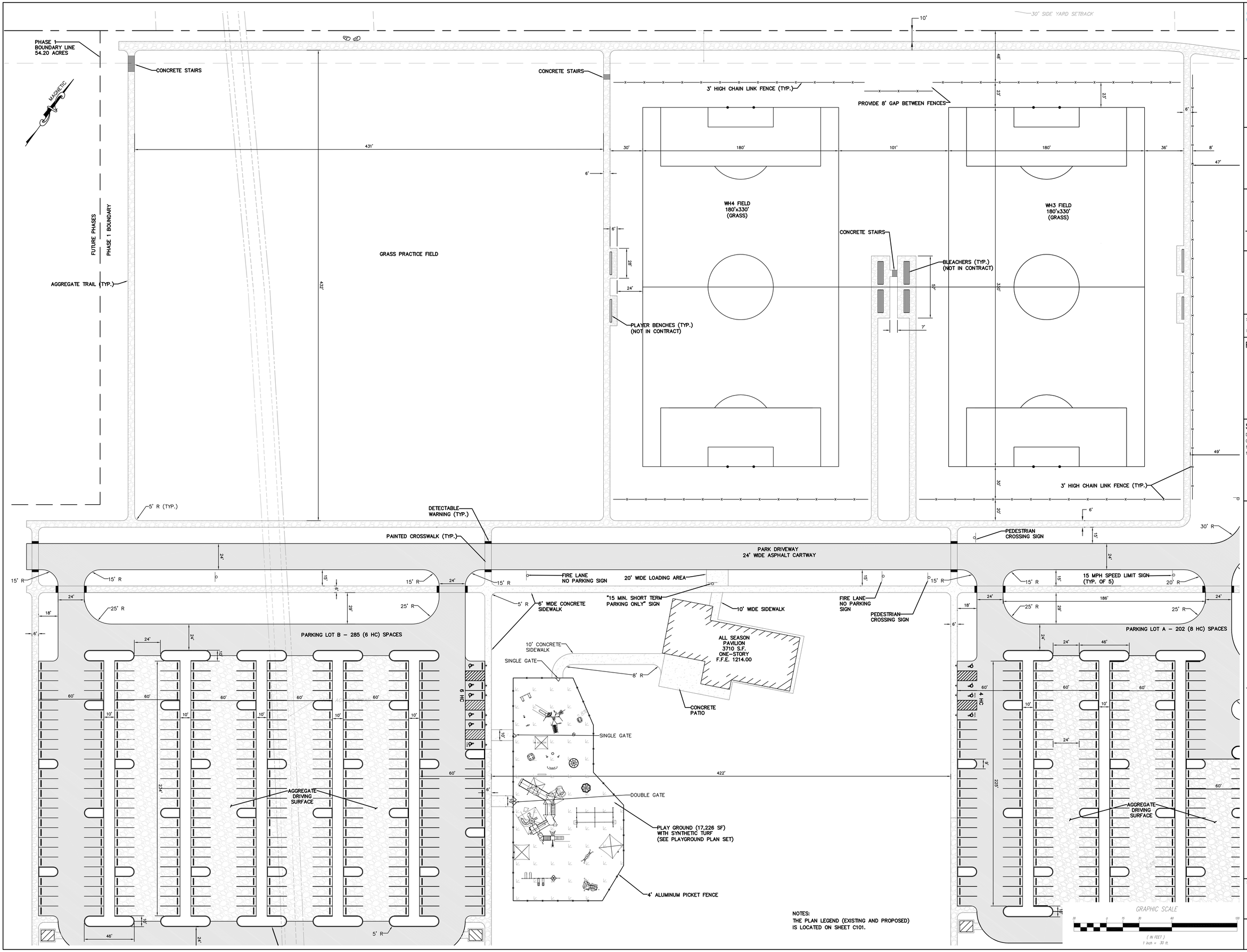
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
OVERALL
SITE PLAN

C103



NOTES:
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DATE	DESCRIPTION
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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.1

PROVIDE 8' GAP BETWEEN FENCES

WH3 FIELD
180'x330'
(GRASS)

CONCRETE STAIRS

BLEACHERS (TYP.)
(NOT IN CONTRACT)

3' HIGH CHAIN LINK FENCE (TYP.)

PEDESTRIAN CROSSING SIGN

15 MPH SPEED LIMIT SIGN
(TYP. OF 5)

FIRE LANE
NO PARKING
SIGN

PEDESTRIAN CROSSING SIGN

PARKING LOT A – 202 (8 HC) SPACES

AGGREGATE DRIVING SURFACE

10'X12' SHED (TYP. OF 4)
WITH GRAVEL APRON

6' HIGH CONCRETE CURB AT PARKING ISLANDS AND ENDS
(TYP. THROUGHOUT PARKING LOTS)

PEDESTRIAN CROSSING SIGN

CONNECT DRIVEWAY TO
EXISTING BLUE COURSE DRIVE EXTENSION
MATCH WIDTH

STOP SIGN

PARK ENTRANCE SIGN

EXISTING FARM ACCESS ROAD

EXISTING TREELINE

APPROXIMATE WOOD LINE

TRAIL

WOODED AREA

10' WIDE COLUMBIA GAS EASEMENT

AGGREGATE TRAIL (TYP.)

AGGREGATE TRAIL THROUGH WOODS TO CONNECT WITH EXISTING PATH. CONTRACTOR TO LAY OUT PATH ALIGNMENT WITH OWNER TO MINIMIZE TREE CLEARANCE.

30' WIDTH (MIN.)
UAJA PUMP STATION
ACCESS & SEWER
EASEMENT AREA

PARK STORAGE BUILDING
ONE-STORY 1680 S.F.
F.F.E. 1187.50

SCREENED DUMPSTER AND
RECYCLING
CONCRETE PAD

EXTERIOR
MATERIAL STORAGE
CONCRETE PAD

MATERIAL DIVIDERS
(NOT IN CONTACT)

BOLLARDS

AGGREGATE
DRIVING SURFACE

MH 11
TC 1172.90
INV. IN 1159.10
INV. OUT 1158.85

UAJA PUMP
STATION
MH. 1A
TC 1172.90
INV. IN 1158.75
INV. OUT 1158.55

PUMP STATION VAULT
INV. IN 1158.70

50' WPP
EASEMENT

MAGNETIC

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NOTES:
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IS LOCATED ON SHEET C101.

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SSE PROJECT No: 16-248

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REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.2

MAGNETIC

PARK DRIVEWAY
24' WIDE ASPHALT CARTWAY

PARKING LOT B – 285 (6 HC) SPACES

FIRE LANE
NO PARKING SIGN

20' WIDE LOADING AREA

"15 MIN. SHORT TERM
PARKING ONLY" SIGN

6' WIDE CONCRETE
SIDEWALK

10' WIDE SIDEWALK

FIRE LANE
NO PARKING
SIGN

PEDESTRIAN
CROSSING SIGN

15 MPH SPEED LIMIT SIGN
(TYP. OF 5)

PARKING LOT A

10' CONCRETE
SIDEWALK

SINGLE GATE

ALL SEASON
PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00

CONCRETE
PATIO

SINGLE GATE

DOUBLE GATE

PLAY GROUND (17,226 SF)
WITH SYNTHETIC TURF
(SEE PLAYGROUND PLAN SET)

4' ALUMINUM PICKET FENCE

AGGREGATE
DRIVING
SURFACE

AGGREGATE
DRIVING
SURFACE

6' HIGH CHAIN LINK FENCE WITH NETTING
(20' HIGH) (TYP. BOTH SIDES)

6' HIGH CONCRETE CURB AT PARKING ISLANDS AND ENDS
(TYP. THROUGHOUT PARKING LOTS)

CONCRETE STAIRS
(TYP. 7 LOCATIONS)

CONCRETE
SIDEWALK

CONCRETE
SIDEWALK

5' R (TYP.)

WH2 FIELD
240'x330'
(GRASS)
(ALTERNATE SYNTHETIC TURF)

WH1 FIELD
240'x330'
(GRASS)
(ALTERNATE SYNTHETIC TURF)

FINAL STRIPING PLAN TO BE
DETERMINED BY OWNER

CONCRETE STAIRS

CONCRETE
STAIRS

ALTERNATE:
6" WIDE CONCRETE PERIMETER
CURB FLUSH TO GRADE

6' AGGREGATE
PERIMETER

3' AGGREGATE
PERIMETER

30' SIDE YARD SETBACK

GRASS PRACTICE FIELD

3/4" PIPE
W/SPIGOT
1.5' REVEAL

FUTURE PHASES
PHASE 1 BOUNDARY

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED)
IS LOCATED ON SHEET C101.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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SYM	DATE	DESCRIPTION

SUBMISSIONS

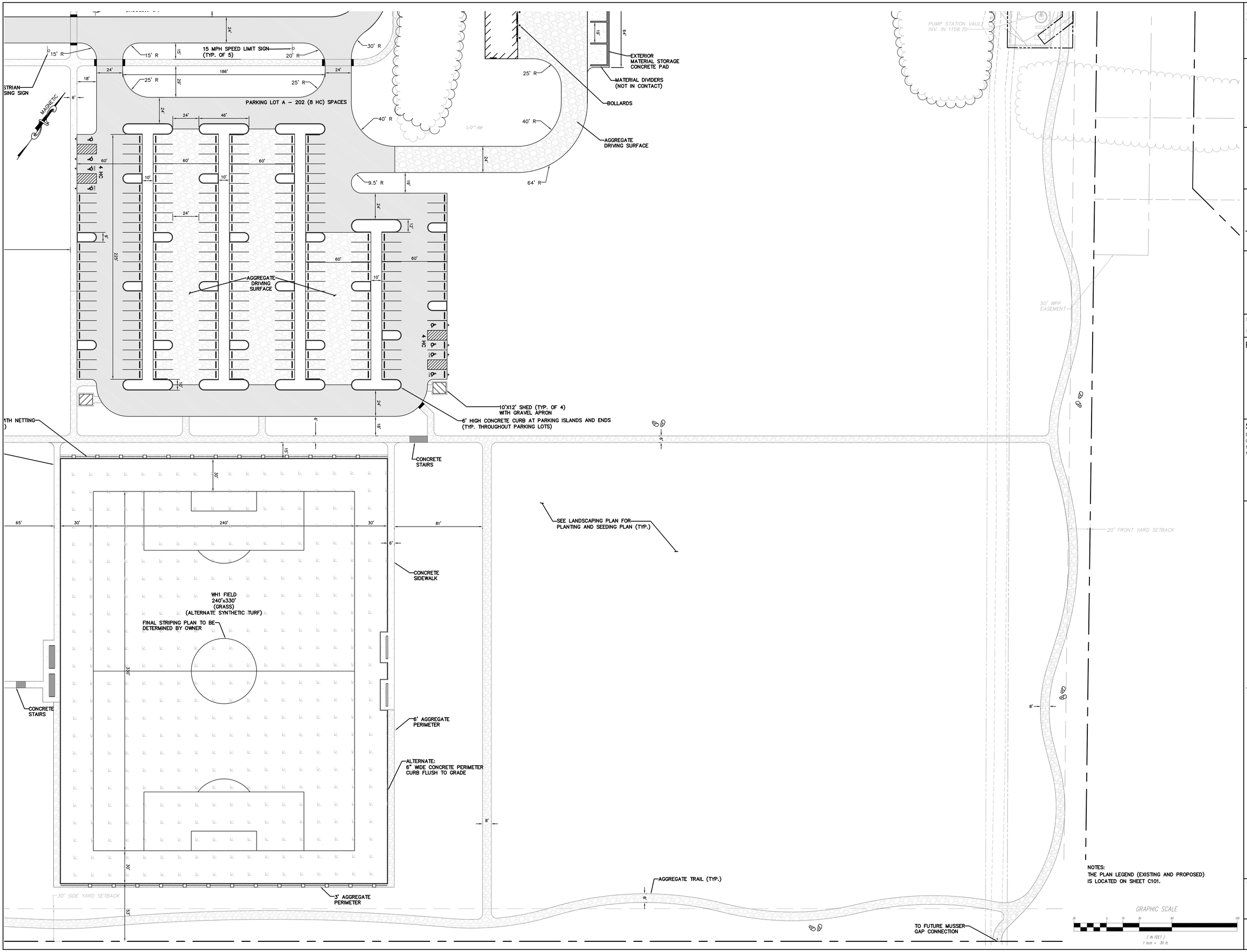
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.3



NOTES:
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DATE	DESCRIPTION
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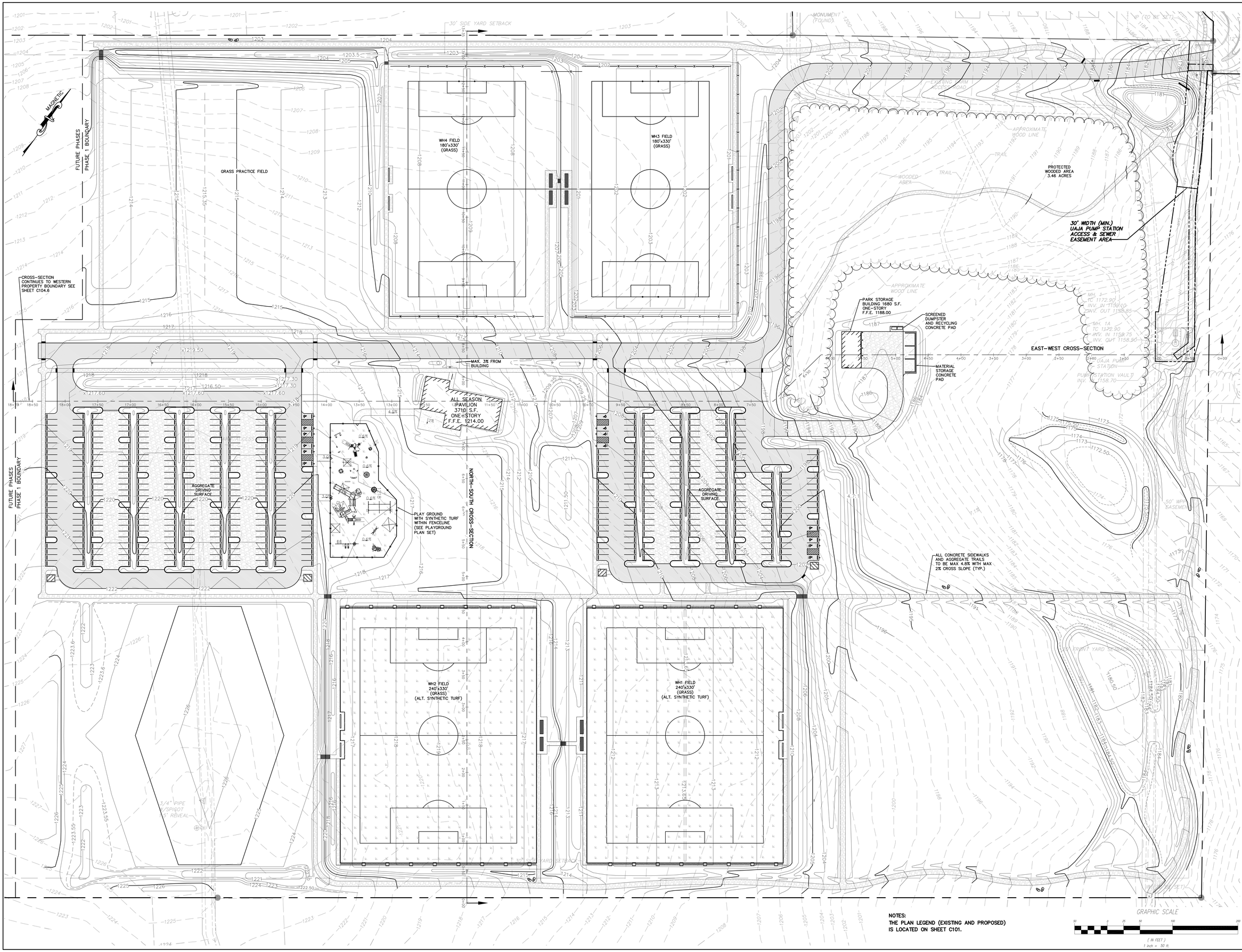
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.4



NOTES:
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GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
OVERALL GRADING PLAN

C104

PHASE 1
BOUNDARY LINE
54.20 ACRES

FUTURE PHASES

PHASE 1 BOUNDARY

MAGNETIC

2:1

4:1

5:1

3:1

1.5%

WH4 FIELD
180'x330'
(GRASS)

WH3 FIELD
180'x330'
(GRASS)

1.9%

BLEACHERS (TYP.)
(NOT IN CONTRACT)

PLAYER BENCHES (TYP.)
(NOT IN CONTRACT)

GRASS PRACTICE FIELD

8' CHAIN LINK FENCE (TYP.)

24' WIDE PAVED PARK DRIVEWAY

1.3%

1.1%

PARKING LOT B

PARKING LOT A

3.3%

MAX. 3% FROM BUILDING

ALL SEASON
PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00

CONCRETE
PATIO

4.5%

2%

3.0%

0.6%

3.2%

1.6%

AGGREGATE
DRIVING
SURFACE

10' WIDE
CONCRETE
SIDEWALK

PLAY GROUND
WITH SYNTHETIC TURF
WITHIN FENCELINE
(SEE PLAYGROUND PLAN SET)

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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REVISIONS

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SUBMISSIONS

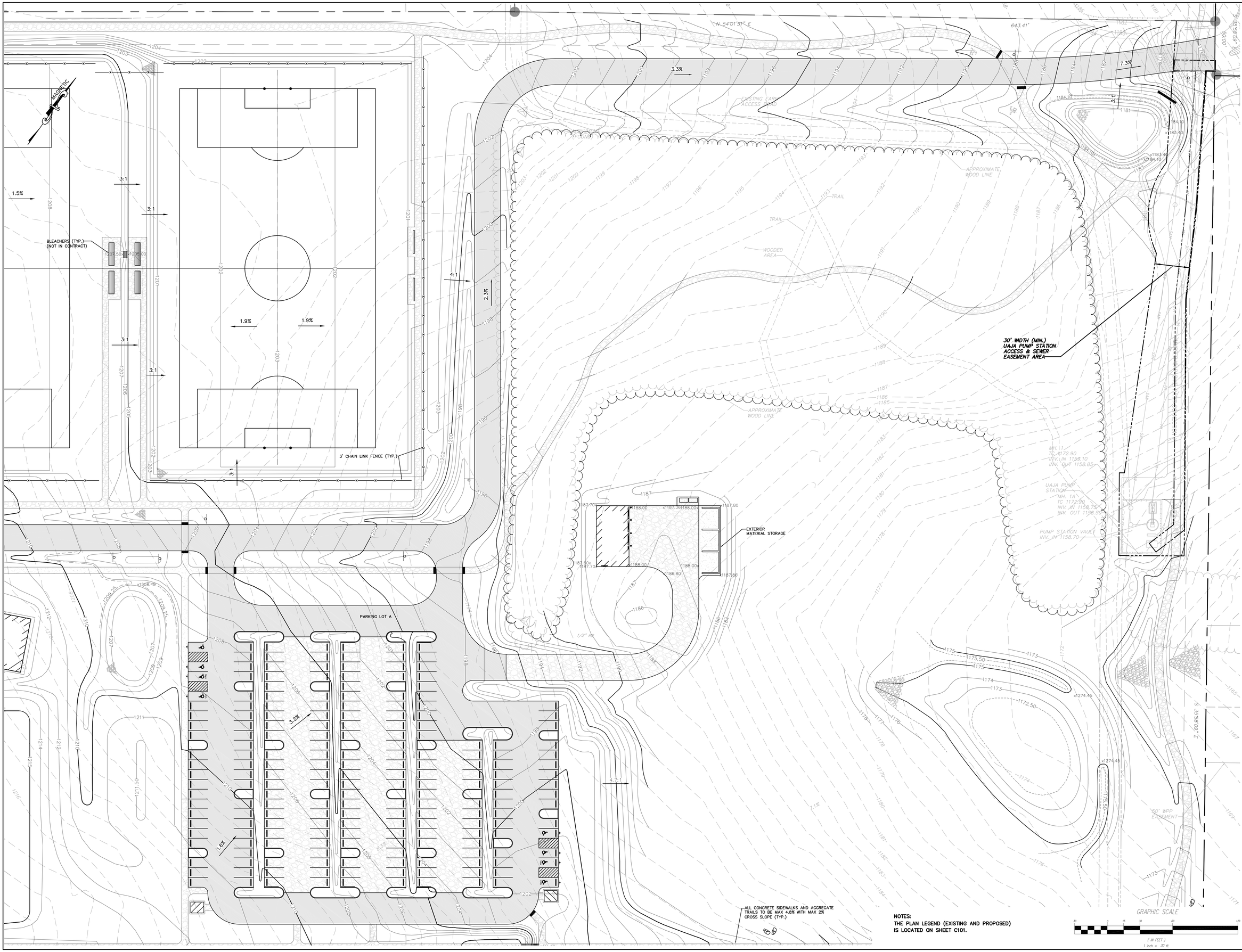
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
GRADING PLAN

C104.1



NOTES:
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SUBMISSIONS

DATE	DESCRIPTION
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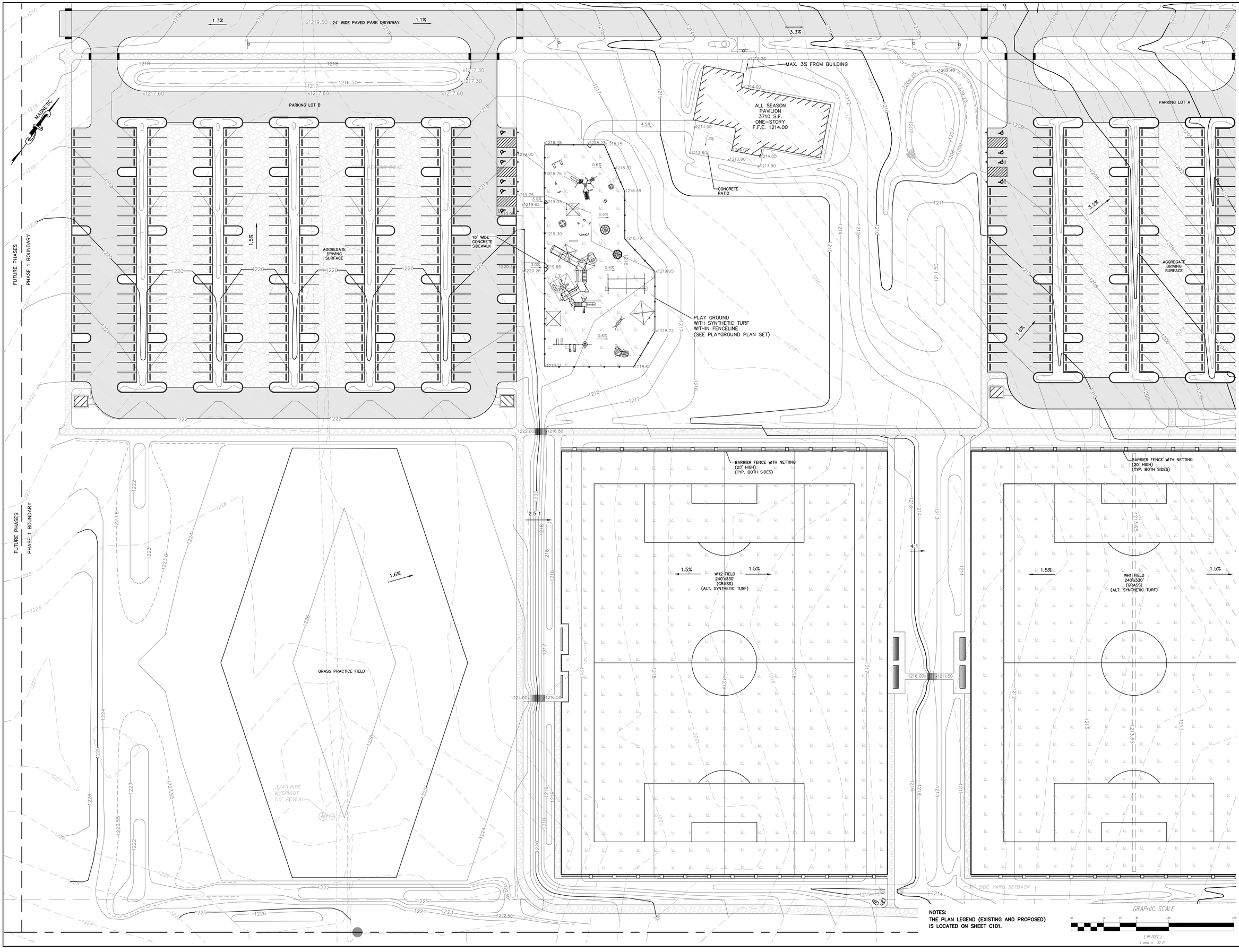
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
GRADING PLAN

C104.2



NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

CENTRE REGION Parks & Recreation
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Fax: (814) 235-7832
www.crpr.org

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FAX: 814-689-1885
WWW.SSE-LLC.COM

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STATE COLLEGE, PA 16801
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f: 814-234-0256
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PENO ENGINEERING
MECHANICAL & ELECTRICAL CONSULTANTS
2746 WEST COLLEGE AVENUE
STATE COLLEGE, PA 16801
814-234-7366
PROJECT NO.: E38095

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BSA / LA
182 FAIRMOUNT DRIVE
LEWISBURG, PA 17837
PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
GRADING PLAN

C104.3

MAX. 3% FROM BUILDING

PARKING LOT A

AGGREGATE DRIVING SURFACE

MATERIAL STORAGE CONCRETE PAD

ALL CONCRETE SIDEWALKS AND AGGREGATE TRAILS TO BE MAX 4.8% WITH MAX 2% CROSS SLOPE (TYP.)

BARRIER FENCE WITH NETTING (20' HIGH) (TYP. BOTH SIDES)

WH1 FIELD
240'x330'
(GRASS)
(ALT. SYNTHETIC TURF)

30' WPP EASEMENT

30' SIDE YARD SETBACK

3280.65'

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

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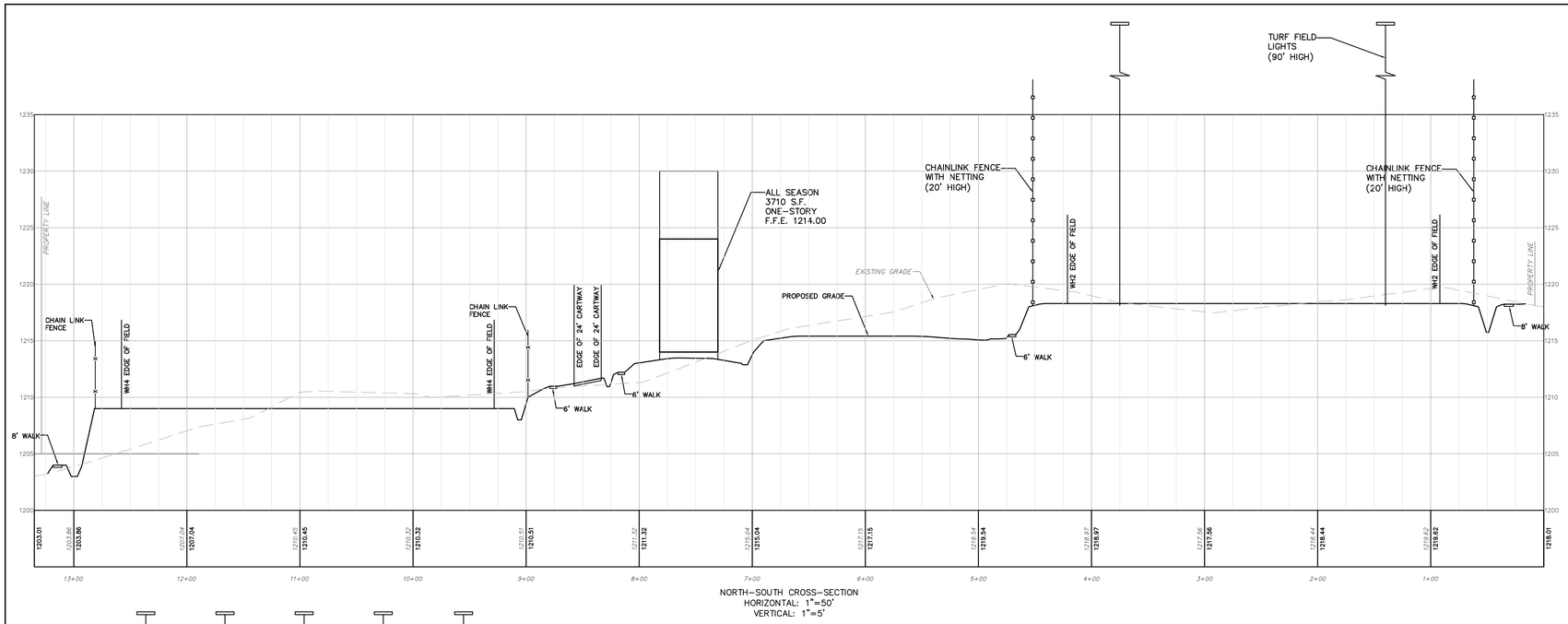
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

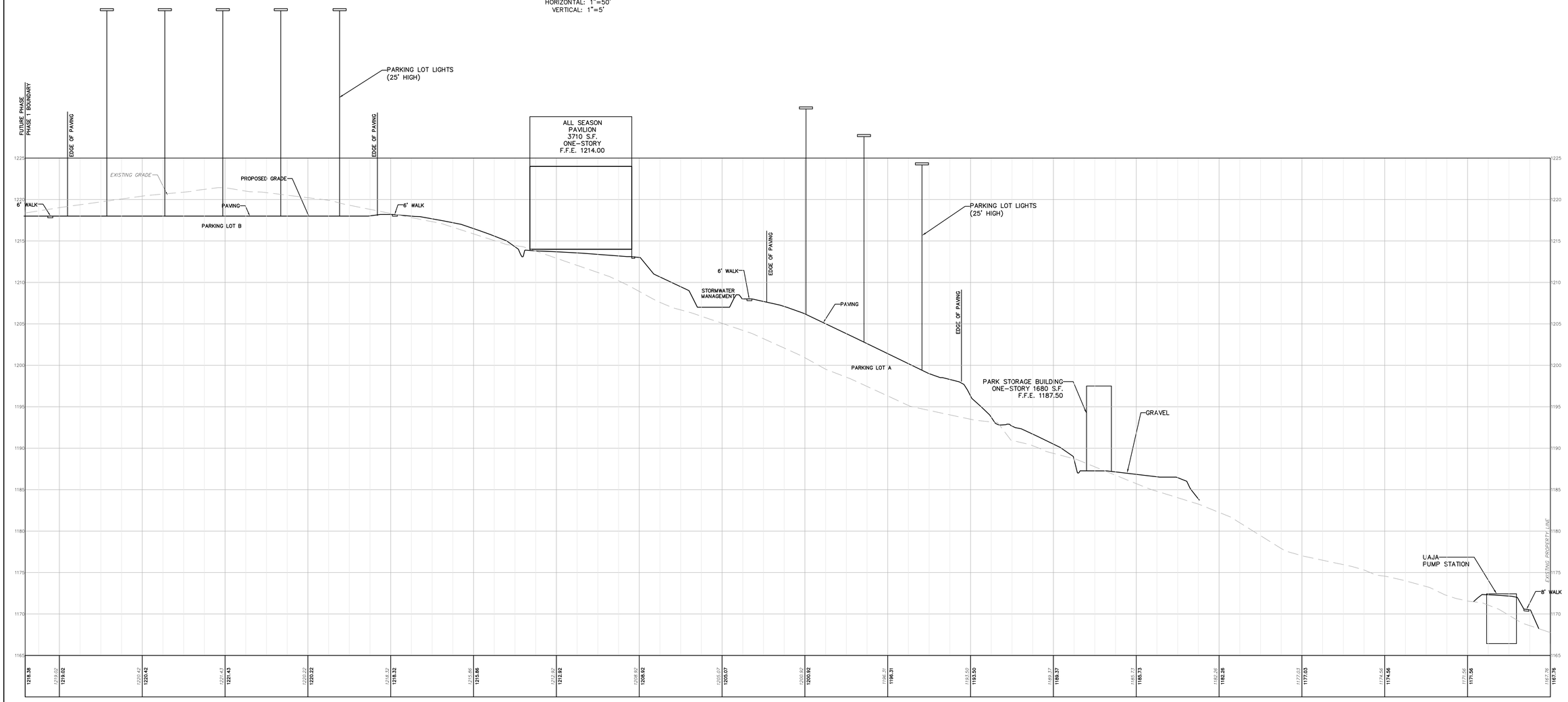
<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
GRADING PLAN

C104.4



NORTH–SOUTH CROSS–SECTION
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



EAST–WEST CROSS–SECTION
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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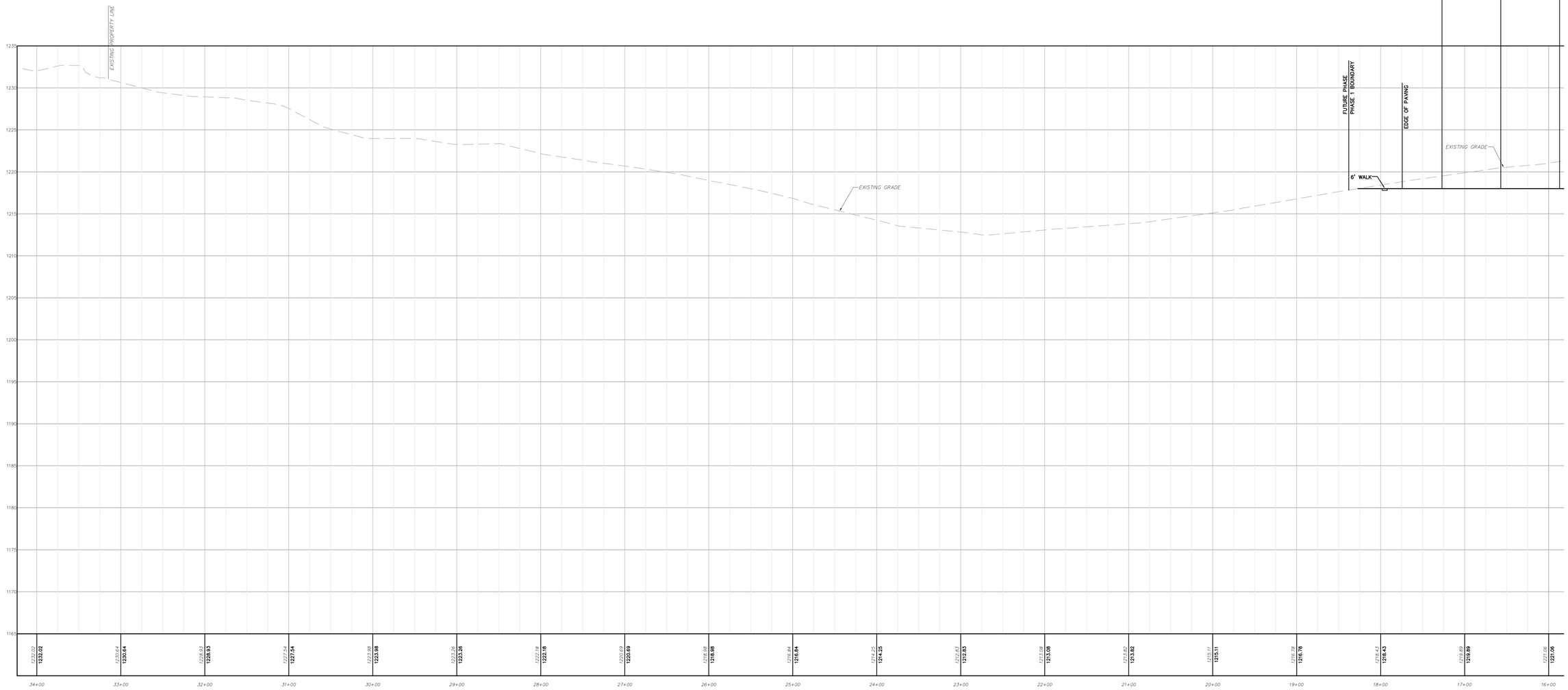
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE CROSS SECTIONS

C104.5



EAST–WEST CROSS–SECTION
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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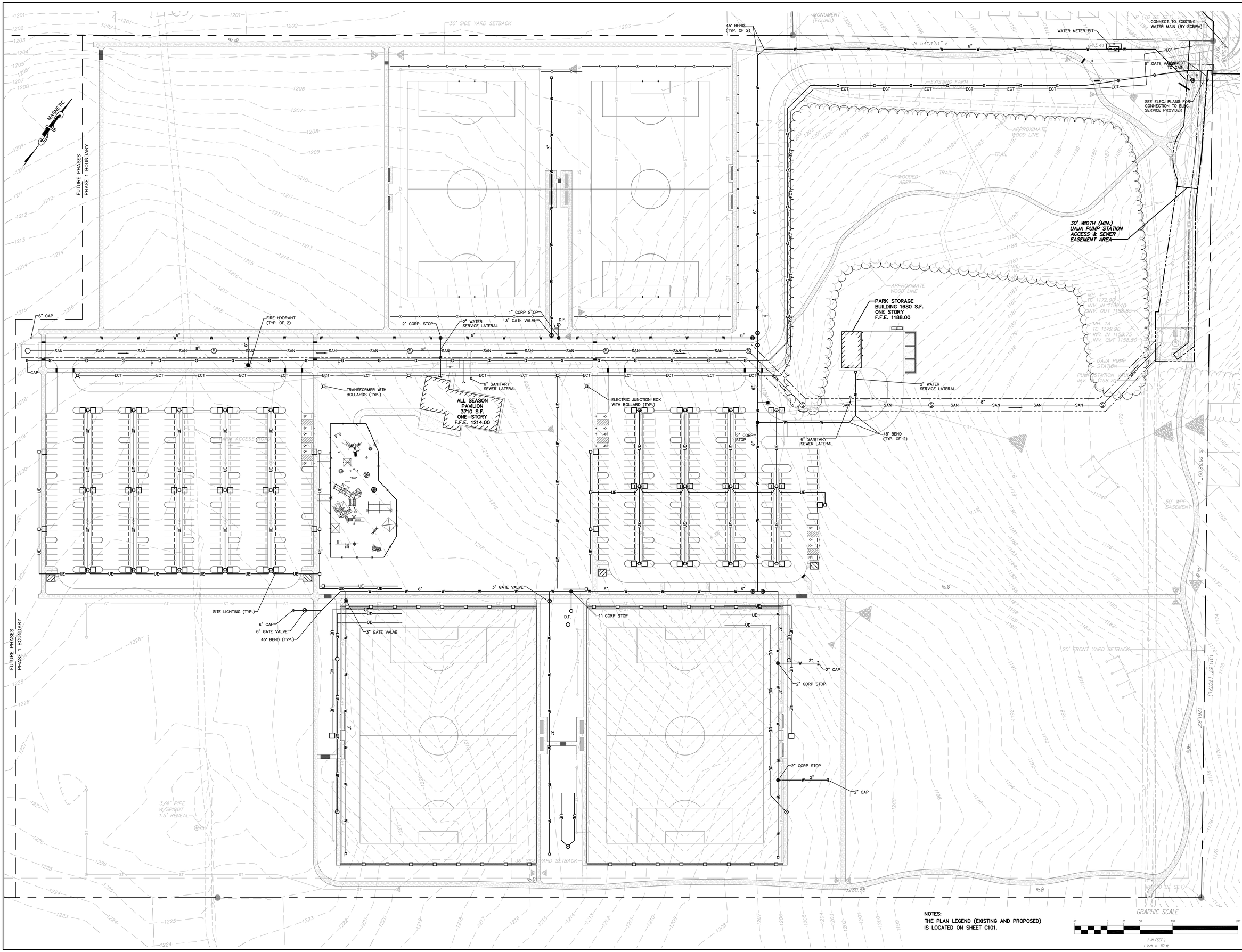
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
SITE
CROSS SECTIONS

C104.6



NOTES:
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WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
OVERALL UTILITY PLAN

C105

MAGNETIC

FUTURE PHASES

PHASE 1 BOUNDARY

30' SIDE YARD SETBACK

MANHOLE NO. WP8
STA: 18+11.4
RIM=1216.38
INV OUT (8")=1206.06

6" CAP

MANHOLE NO. WP7
STA: 15+26.4
RIM=1216.47
INV IN (8")=1204.56
INV OUT (8")=1204.36

FIRE HYDRANT
(TYP. OF 2)

MANHOLE NO. WP6
STA: 12+26.4
RIM=1211.24
INV IN (8")=1202.86
INV OUT (8")=1202.66

IN-GROUND VALVE BOX
WITH QUICK COUPLER
HOSE BIB (TYP.)

3" IRRIGATION LINE

1" CORP STOP

3" GATE VALVE

D.F.

MANHOLE NO. WP5
STA: 9+26.4
RIM=1205.83
INV IN (8")=1200.71
INV OUT (8")=1200.51

"20' SEWER EASEMENT

2" CORP. STOP

2" WATER
SERVICE LATERAL

CAP

BOLLARD (TYP.)

TRANSFORMER WITH BOLLARDS (TYP.)

6" SANITARY
SEWER LATERAL

ALL SEASON
PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00

ELECTRIC JUNCTION BOX
WITH BOLLARD (TYP.)

FIRE

6"x6"
TEE

FARM ACCESS ROAD

SITE LIGHT
(TYP. SEE ELEC. PLANS)

SITE LIGHTING (TYP.)

SITE LIGHTING
(TYP. SEE ELEC. PLANS)

6.37%

NOTES:
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IS LOCATED ON SHEET C101.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
SITE UTILITY
PLAN 1

C105.1

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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE UTILITY PLAN 2

C105.2

6" PVC BYPASS
6" BACK FLOW PREVENTER
6" GATE VALVE
WATER METER PIT
6" SENSUS OMNI F2 METER
6" G.V.
6" G.V.
8'X15'X6.50 WATER METER PIT W/BILCO DOUBLE DOOR ALUMINUM HATCH CAST IN PLACE (MIN. WIDTH 60")
45° BEND (TYP. OF 2)
N 54°01'51" E
643.41'
6"
IP TO BE SET
S 35°58'09" E 60.00'
CONNECT TO GAS
CONNECT TO EXISTING WATER MAIN (BY SCBWA)
6" GATE VALVE
12" GV
6" BO
EXISTING FARM ACCESS ROAD
APPROXIMATE WOOD LINE
TRAIL
TRAIL
WOODED AREA
PROTECTED WOODED AREA
3.46 ACRES
IN-GROUND VALVE BOX WITH QUICK COUPLER HOSE BIB (TYP.)
WH3 FIELD
180'x330'
(GRASS)
MANHOLE NO. WP4
STA: 7+08.4
RIM=1196.58
INV IN (8")=1191.67
INV OUT (8")=1190.50
30' WIDTH (MIN.)
UAJA PUMP STATION ACCESS & SEWER EASEMENT AREA
MANHOLE NO. 1A
STA: 0+00.0
RIM=1172.15
INV IN (8")=1162.28
MANHOLE NO. WP5
STA: 9+26.4
RIM=1205.83
INV IN (8")=1200.71
INV OUT (8")=1200.51
20' SEWER EASEMENT
MH 11
TC 1172.90
INV. IN 1159.10
INV. OUT 1158.85
UAJA PUMP STATION
MH. 1A
TC 1172.90
INV. IN 1158.75
INV. OUT 1158.50
RESTORE FENCE AND SURFACE WITHIN PUMP STATION ENCLOSURE
PUMP STATION VAULT
INV. IN 1158.70
CONNECT TO EXISTING MANHOLE 1A AT PUMP STATION
PARK STORAGE BUILDING 1680 S.F. ONE-STORY F.F.E. 1188.00
SCREENED DUMPSTER AND RECYCLING CONCRETE PAD
MATERIAL STORAGE CONCRETE PAD
MANHOLE NO. WP1
STA: 1+32.0
RIM=1172.57
INV IN (8")=1166.50
INV OUT (8")=1166.00
20' SEWER EASEMENT
128.04' OF 8" PVC @ 2.95%
214.00' OF 8" PVC @ 4.13%
113.32' OF 8" PVC @ 3.97%
193.03' OF 8" PVC @ 5.83%
258.00' OF 8" PVC @ 3.04%
2" WATER SERVICE LATERAL
6" SANITARY SEWER LATERAL
IN-GROUND VALVE BOX WITH QUICK COUPLER HOSE BIB (TYP.)
45° BEND (TYP. OF 2)
MANHOLE NO. WP3
STA: 5+91.1
RIM=1191.01
INV IN (8")=1186.00
INV OUT (8")=1185.80
MANHOLE NO. WP2
STA: 3+94.0
RIM=1182.14
INV IN (8")=1174.54
INV OUT (8")=1174.34
50' WPP EASEMENT
S 35°58'09" E
MAGNETIC
GRAPHIC SCALE
30' 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.
STOP
D.F.
20' SEWER EASEMENT
6" G.V. (TYP.)
6"x6"x6" TEE
ELECTRIC JUNCTION BOX WITH BOLLARD (TYP.)
FIRE HYDRANT
6"x6"x6" TEE
2" CORP STOP
SITE LIGHT (TYP. SEE ELEC. PLANS)
SITE LIGHTING (TYP. SEE ELEC. PLANS)
AGGREGATE DRIVING SURFACE
ALL CONCRETE SIDEWALKS AND AGGREGATE TRAILS TO BE MAX 4.8% WITH MAX 2%

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

MAGNETIC

FUTURE PHASES
PHASE 1 BOUNDARY

BOLLARD (TYP.)
TRANSFORMER WITH BOLLARDS (TYP.)
6" SANITARY SEWER LATERAL
ELECTRIC JUNCTION BOX WITH BOLLARD (TYP.)
FIRE 6"x6" TEE
ALL SEASON PAVILION 3710 S.F. ONE-STORY F.F.E. 1214.00
FARM ACCESS ROAD
SITE LIGHT (TYP. SEE ELEC. PLANS)
SITE LIGHTING (TYP.)
SITE LIGHTING (TYP. SEE ELEC. PLANS)
SEE SITE ELECTRIC (TYP.)
45° BEND (TYP.)
6"x6"x3" TEE
6"x6"x3" TEE
3" GATE VALVE
6" CAP
6" GATE VALVE
D.F.
1" CORP STOP
DRINKING FOUNTAIN
3" GATE VALVE
3" IRRIGATION LINE
3" IRRIGATION LINE
3" IRI
FIELD LIGHT (TYP. SEE ELECTRIC PLAN)
IN-GROUND VALVE BOX WITH QUICK COUPLER HOSE BIB (TYP.)
FIELD LIGHT (TYP. SEE ELECTRIC PLAN)
3/4" PIPE W/SPIGOT 1.5' REVEAL
30' SIDE YARD SETBACK

NOTES:
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GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE UTILITY PLAN 3

C105.3

ELECTRIC JUNCTION BOX WITH BOLLARD (TYP.)

FIRE HYDRANT

6"x6"x6" TEE

IN-GROUND VALVE BOX WITH QUICK COUPLER HOSE BIB (TYP.)

6" SANITARY SEWER LATERAL

2" WATER SERVICE LATERAL

MATERIAL STORAGE CONCRETE PAD

20' SEWER EASEMENT

CONNECT TO EXISTING MANHOLE 1A AT PUMP STATION

115.22' OF 8" PVC @ 3.97%

193.03' OF 8" PVC @ 5.83%

258.00' OF 8" PVC @ 3.04%

138.04' OF 8" PVC @ 5.14%

45° BEND (TYP. OF 2)

2" CORP STOP

SITE LIGHT (TYP. SEE ELEC. PLANS)

MANHOLE NO. WP3
STA: 5+91.1
RIM=1191.01
INV IN (8")=1186.00
INV OUT (8")=1185.80

MANHOLE NO. WP2
STA: 3+94.0
RIM=1182.14
INV IN (8")=1174.54
INV OUT (8")=1174.34

AGGREGATE DRIVING SURFACE

SITE LIGHTING (TYP. SEE ELEC. PLANS)

6"x6"x3" TEE
6" GV (TYP.)

3" GV

90° BEND

D.F.

1" CORP STOP

DRINKING FOUNTAIN

WH1 FIELD
240'x330'
(GRASS)
(ALT. SYNTHETIC TURF)

3" IRRIGATION LINE

2" CAP

2" CORP STOP

2" CORP STOP

2" CAP

FIELD LIGHT (TYP. SEE ELECTRIC PLAN)

IN-GROUND VALVE BOX WITH QUICK COUPLER HOSE BIB (TYP.)

50' WPP EASEMENT

20' FRONT YARD SETBACK

30' SIDE YARD SETBACK

GRASS SWALE

MAGNETIC

NOTES:
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GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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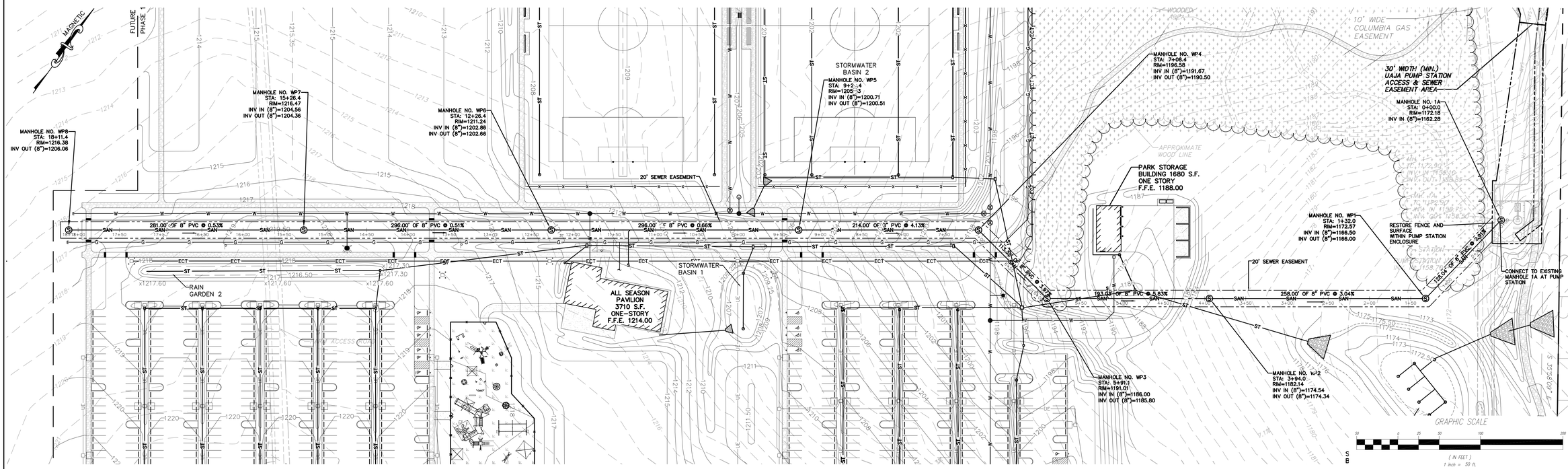
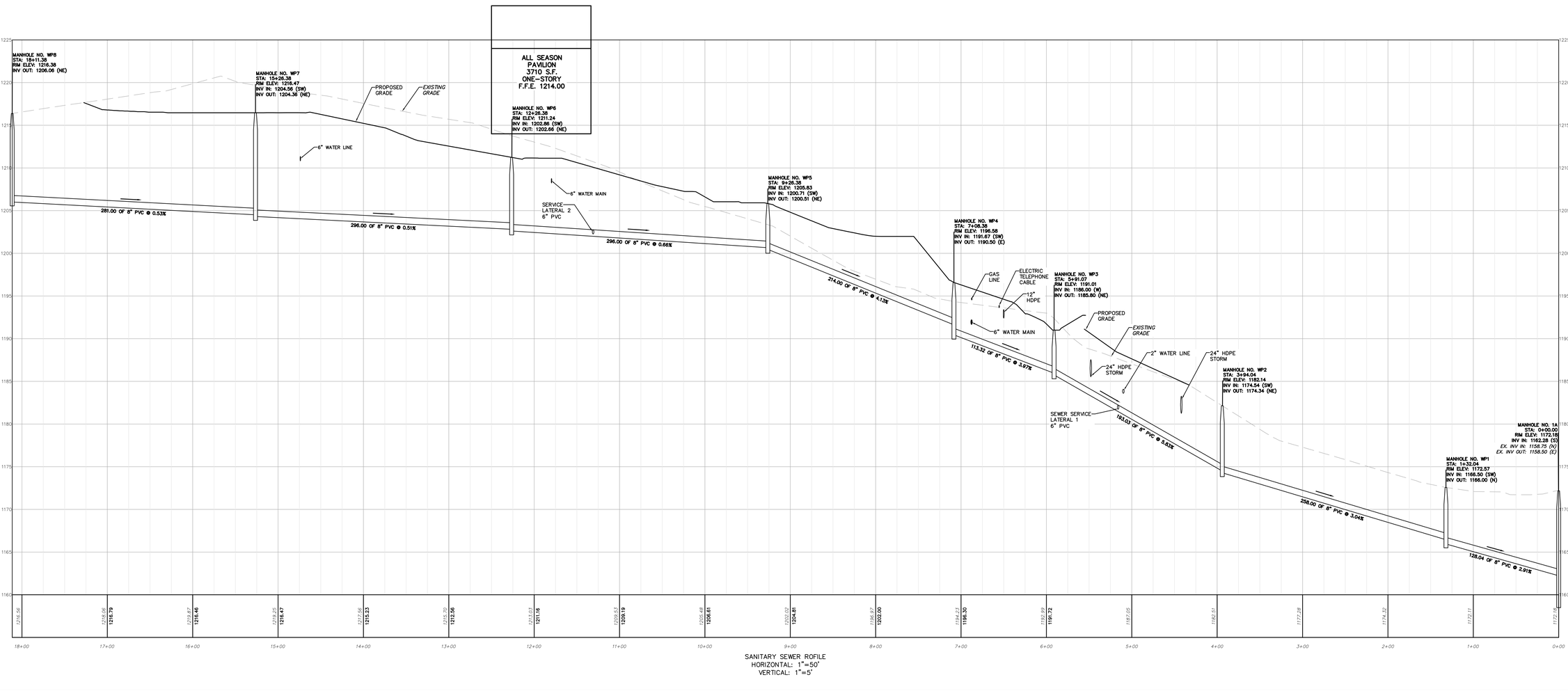
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE UTILITY PLAN 4

C105.4





SANITARY SEWER ROFILE
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

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814-234-7366

BSA LA
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PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

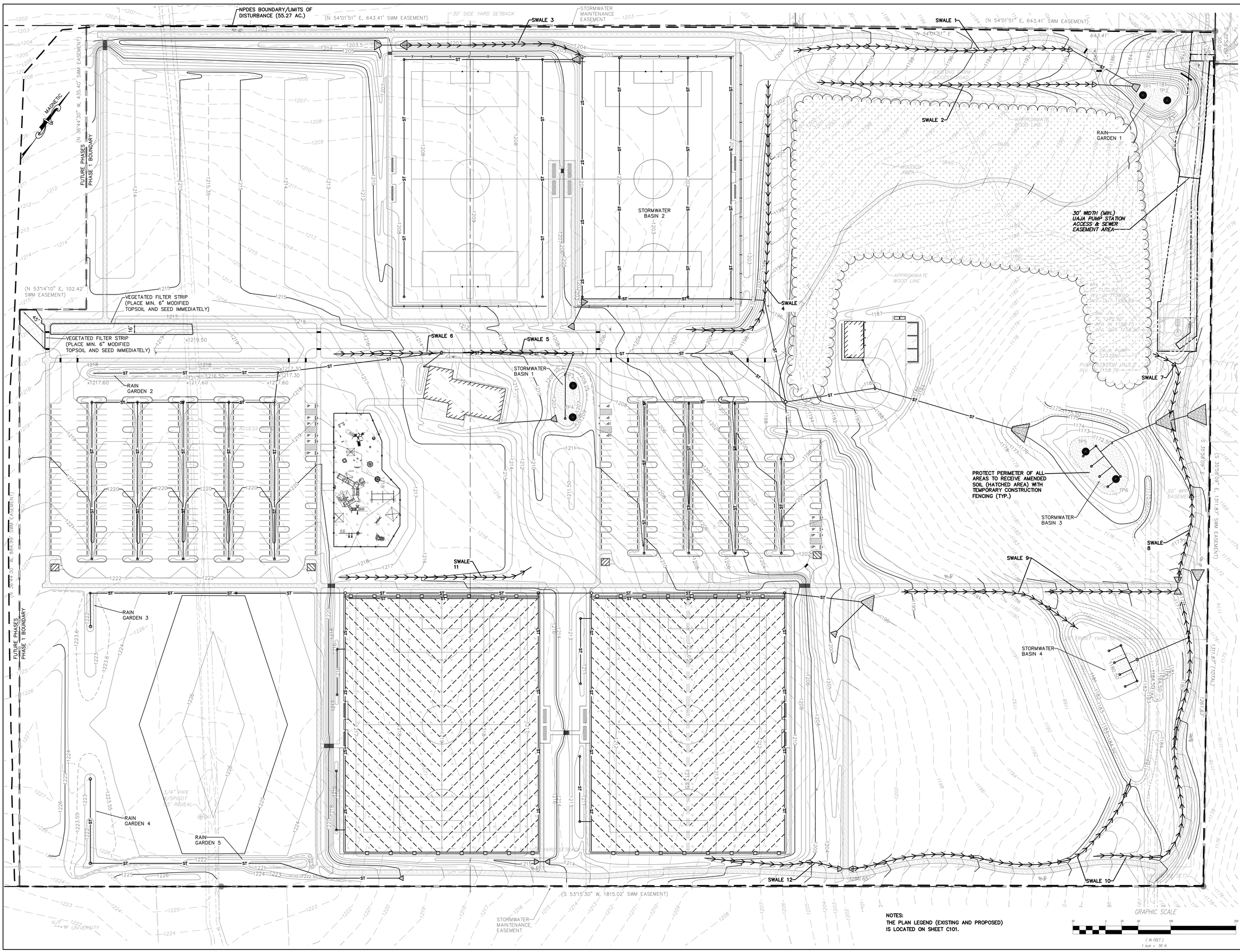
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SANITARY SEWER PROFILE

C105.5



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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
OVERALL POST CONSTRUCTION STORMWATER MANAGEMENT

C106

RIP RAP APRON 8
12" HDPE CULVERT
INV. IN: 1203.50
INV. OUT: 1203.00
RIP RAP APRON 7
SWALE 3
6" HDPE DISCHARGE PIPE
INV. IN: 1206.00
INV. OUT: 1203.00
RIP RAP APRON 18
30' SIDE YARD SETBACK
MAGNETIC
FUTURE PHASES
PHASE 1 BOUNDARY
6" CLEANOUT WITH GRATE TOP
8" PERF HDPE
INV. 1206.00 @ 0%
SEE PCSM DETAILS
WH4 FIELD
180'x330'
(GRASS)
WH3 FIELD
180'x330'
(GRASS)
8" HDPE PERF. UNDERDRAINS
INV. 1199 @ 0.0%
SEE PCSM DETAILS
8" HDPE PERF. UNDERDRAIN
INV. 1206.00 @ 0%
SEE PCSM DETAILS
8" HDPE PERF. UNDERDRAIN
INV. 1206.00 @ 0%
SEE PCSM DETAILS
STORMWATER BASIN 2
GRASS PRACTICE FIELD
6" CLEANOUT
RIP RAP APRON 6
CONNECT 8" PIPE TO 12" PIPE WITH INSERTA TEE (TYP. 4)
12" PERF HDPE
INV. 1199 @ 0%
12" HDPE CULVERT
INV. IN: 1205.5
INV. OUT: 1203.0
RIP RAP APRON 5
VEGETATED FILTER STRIP
(PLACE MIN. 6" MODIFIED TOPSOIL
AND SEED IMMEDIATELY)
RAIN GARDEN 2
4" UNDERDRAIN
INV. 1215.0 @ 0%
INLET 7
TYPE M 2x2
T/G: 1216.50
INV. IN (6"): 1215.00
INV. IN: (18"):1213.00
INV. OUT (24"): 1213.00
SWALE 6
INLET 6
TYPE M 2x4
T/G: 1212.75
INV. IN (24"): 1209.75
INV. IN (6"): 1210.50
INV. OUT (24"): 1209.75
SWALE 5
INLET 4
TYPE M 2x4
T/G: 1197.70
INV. IN (24"): 1194.00
INV. OUT (24"): 1194.00
24" HDPE
EMERGENCY SPILLWAY
ELEV. 1217.30
10' LENGTH
5' WIDE
6" CLEANOUT WITH GRATE TOP
T/G: 1212.70
INV. OUT: 1212.00
MAX. 3% FROM BUILDING
INLET 5
TYPE M 2x4
T/G: 1206.7
INV. IN (24"): 1203.00
INV. IN (6"): 1203.00
INV. OUT (24"): 1203.00
BASIN 1
SPILLWAY
ELEV. 1208.40
35' LENGTH
10' WIDTH
CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1217.00
INV.15"=1215.00
T/G: 1217.00
INV.15"=1214.67
15" SOLID HDPE MANIFOLD @ 0.50%
T/G: 1217.00
INV. 15"=1214.33
T/G: 1217.00
INV. 15"=1214.00
18" HDPE
INLET 8
TYPE M 2x2
T/G: 1216.50
INV. IN (15"): 1213.60
INV. IN (4"): 1215.00
INV. OUT (18"): 1214.50
ALL SEASON PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00
6" YARD DRAIN WITH DOMED GRATE TOP
ELEV. 1207.50
INV. 1205.00
BEGIN SOLID 6" HDPE
PERF 6" HDPE UNDERDRAIN
INV. 1205.00 @ 0.0%
SEE PCSM DETAILS
STORMWATER BASIN 1
6" CLEANOUT
RIP RAP APRON
INV. 1208.00
6" ROOF DRAIN
INV. OUT 1210.00
CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1206.00
INV. 12"=1204.50
12" SOLID HDPE MANIFOLD @ 5.0%
T/G: 1202.00
INV. 12"=1200.00
AGGREGATE DRIVING SURFACE
AGGREGATE DRIVING SURFACE
PARKING SWALE W/UNDERDRAINS (TYP. OF 4)
4" PERF PIPE INSTALLED WITHIN SWALE.
SLOPE TO MATCH SWALE GRADE AND PROVIDE
MIN. 12" COVER. CONNECT TO 15" MANIFOLD
PIPE WITH INSERTA TEE.
PLAY GROUND
WITH SYNTHETIC TURF
WITHIN FENCELINE
(SEE PLAYGROUND PLAN SET)
NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED)
IS LOCATED ON SHEET C101.
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME

POST CONSTRUCTION STORMWATER MANAGEMENT

C106.1

SWALE 3
8" HDPE DISCHARGE PIPE
INV. IN: 1206.00
INV. OUT: 1203.00
RIP RAP APRON 18
30' SIDE YARD SETBACK
SWALE 1
RIP RAP APRON 1.1
10" HDPE CULVERT
INV IN: 1189.70
INV. OUT: 1181.00
643.41'
N 54°01'51" E
6" CLEANOUT
8" CLEANOUT WITH GRATE TOP
8" PERF HDPE
INV. 1199 @ 0.0%
(TYP. OF 4)
EXISTING FARM ACCESS ROAD
RIP RAP APRON 1
RIP RAP APRON 1.2
12" CULVERT
INV. IN: 1186.70
INV. OUT: 1181.00
SWALE 2
RAIN GARDEN 1
SPILLWAY
ELEV. 1183.40
30' LENGTH
10' WIDTH
MAGNETIC
WH3 FIELD
180'x330'
(GRASS)
8" HDPE PERF. UNDERDRAINS
INV. 1199 @ 0.0%
SEE PCSM DETAILS
APPROXIMATE WOOD LINE
PROTECTED WOODED AREA
3.46 ACRES
TRAIL
WOODED AREA
8" HDPE PERF. UNDERDRAIN
INV. 1206.00 @ 0%
SEE PCSM DETAILS
STORMWATER BASIN 2
30' WIDTH (MIN.)
UAJA PUMP STATION ACCESS & SEWER EASEMENT AREA
BASIN 2 EMERGENCY SPILLWAY
ELEV. 1202.50
40' LENGTH
10' WIDTH
BASIN 2 OUTLET STRUCTURE
TYPE M 2x2
SEE PCSM DETAILS
INLET 3
TYPE M 2x4
INV. IN (12"): 1195.50
INV OUT (12"): 1194.25
6" CLEANOUT
RIP RAP APRON 6
12" HDPE
PARK STORAGE BUILDING 1680 S.F.
ONE-STORY
F.F.E. 1188.00
SCREENED DUMPSTER AND RECYCLING CONCRETE PAD
CONNECT 8" PIPE TO 12" PIPE WITH INSERTA TEE (TYP. 4)
12" PERF HDPE
INV. 1199 @ 0%
12" HDPE CULVERT
INV. IN: 1205.5
INV. OUT: 1203.0
RIP RAP APRON 5
INLET 4
TYPE M 2x4
T/G: 1197.70
INV. IN (24"): 1194.00
INV. OUT (24"): 1194.00
SWALE 4
SWALE 5
24" HDPE
6" CLEANOUT
INV. 1186.00
6" HDPE
INLET 2
TYPE 4 4x4
WITH MANHOLE TOP
T/G: 1195.0
INV. IN (12") N: 1191.50
INV. IN (24") W: 1189.00
INV. IN (12") W: 1192.50
INV. IN (12") S: 1192.50
INV. OUT (24") 1189.00
MATERIAL STORAGE CONCRETE PAD
6" HDPE ROOF COLLECTION
BUILDING
INLET 5
TYPE M 2x4
T/G: 1206.7
INV. IN (24"): 1203.00
INV. IN (6"): 1203.00
INV. OUT (24"): 1203.00
BASIN 1
SPILLWAY
ELEV. 1208.40
35' LENGTH
10' WIDTH
6" YARD DRAIN WITH DOMED GRATE "OP
ELEV. 1207.50
INV. 1205.00
BEGIN SOLID 6" HDPE
PERF 6" HDPE UNDERDRAIN
INV. 1205.00 @ 0.0%
SEE PCSM DETAILS
STORMWATER BASIN 1
CLEANOUT WITH GRATE TOP
(TYP. OF 4)
12" SOLID HDPE MANIFOLD @ 5.0%
T/G: 1206.00
INV. 12"=1204.50
T/G: 1202.00
INV. 12"=1200.00
T/G: 1199.00
INV. 12" 1197.00
INLET 1
TYPE M 2x4
T/G: 1185.75
INV. IN (24"): 1182.75
INV. IN (6"): 1184.25
INV. OUT (24"): 1182.75
RIP RAP APRON 4
INV. 1175.00
SWALE 7
TOP OF WALK ABOVE CULVERT
ELEV. 1168.20
18" OUTLET PIPE
INV. OUT: 1167.50
RIP RAP APRON 3
RIP RAP APRON 2
2-10" HDPE CULVERTS
INV. IN: 1166.50
INV. OUT: 1166.00
RIP RAP APRON
INV. 1208.00
6" ROOF DRAIN
INV. OUT 1210.00
T/G: 1197.00
INV. 1195.00
INLET 2.1
TYPE M 2x2
T/G: 1195.7
INV. IN: (6"): 1194.00
INV. OUT: (12"): 1194.00
4" PERFORATED UNDERDRAIN @ 0%
INV. 1171.00
CONNECT TO OUTLET STRUCTURE
6" CLEANOUT
(TYP OF 6)
BASIN 3 OUTLET STRUCTURE
SEE PCSM DETAILS
BASIN 3 EMERGENCY SPILLWAY
ELEV. 1174.45
70' LENGTH
10' WIDTH
AGGREGATE DRIVING SURFACE
PROTECT PERIMETER OF ALL AREAS TO RECEIVE AMENDED SOIL (HATCHED AREA) WITH TEMPORARY CONSTRUCTION FENCING (TYP.)
STORMWATER BASIN 3
PLACE 12" AMENDED SOIL WHERE HATCHED (TYP. ALL BASIN AND RAIN GARDENS)
PARKING SWALE W/UNDERDRAINS)TYP. OF 4)
4" PERF PIPE INSTALLED WITHIN SWALE. SLOPE TO MATCH SWALE GRADE AND PROVIDE MIN. 12" COVER. CONNECT TO 12" MANIFOLD PIPE WITH INSERTA TEE.
6" SOLID CLEANOUT AT ENDS (TYP.)
ALL CONCRETE SIDEWALKS AND AGGREGATE TRAILS TO BE MAX 4.8% WITH MAX 2% CROSS SLOPE (TYP.)
MH.11
TC: 1172.90
INV.IN 1159.10
INV. OUT 1158.85
UAJA PUMP STATION
MH. 1A
TC: 1172.90
INV. IN 1158.75
INV. OUT 1158.50
PUMP STATION VAULT
INV. IN 1158.70
60' WPP EASEMENT

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT

C106.2

FUTURE PHASES
PHASE 1 BOUNDARY
MAGNETIC
CART PATH
AGGREGATE DRIVING SURFACE
CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1217.00
INV. 15"=1215.00
T/G: 1217.00
INV.15"=1214.67
15" SOLID HDPE MANIFOLD @ 0.50%
T/G: 1217.00
INV. 15"=1214.33
T/G: 1217.00
INV. 15"=1214.00
18" HDPE
24" HDPE
EMERGENCY SPILLWAY
ELEV. 1217.30
10' LENGTH
5' WIDE
INLET 8
TYPE M 2x2
T/G: 1216.50
INV. IN (15"): 1213.60
INV. IN (4"): 1215.00
INV. OUT (18"): 1214.50
6" CLEANOUT WITH GRATE TOP
T/G: 1212.70
INV. OUT: 1212.00
MAX. 3% FROM BUILDING
ALL SEASON PAVILION
3710 S.F.
ONE-STORY
F.F.E. 1214.00
INLET 5
TYPE M 2x4
T/G: 1206.7
INV. IN (24"): 1203.00
INV. IN (6"): 1203.00
INV. OUT (24"): 1203.00
6" YARD DRAIN WITH DOMED GRATE TOP
ELEV. 1207.50
INV. 1205.00
BEGIN SOLID 6" HDPE
PERF 6" HDPE UNDERDRAIN
INV. 1205.00 @ 0.0%
SEE PCSM DETAILS
STORMWATER BASIN 1
BASIN 1 SPILLWAY
ELEV. 1208.40
35' LENGTH
10' WIDTH
6" CLEANOUT
RIP RAP APRON
INV. 1208.00
6" ROOF DRAIN
INV. OUT 1210.00
CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1206.00
INV. 12"=1204.50
12" SOLID HDPE MANIFOLD @ 5.0%
T/G: 1202.00
INV. 12"=1200.00
T/G: INV.
AGGREGATE DRIVING SURFACE
PLAY GROUND
WITHIN SYNTHETIC TURF
WITHIN FENCELINE
(SEE PLAYGROUND PLAN SET)
PARKING SWALE W/UNDERDRAINS (TYP. OF 4)
4" PERF PIPE INSTALLED WITHIN SWALE.
SLOPE TO MATCH SWALE GRADE AND PROVIDE
MIN. 12" COVER. CONNECT TO 15" MANIFOLD
PIPE WITH INSERTA ...
12" CLEANOUT WITH GRATE TOP
T/G: 1222.00 CONNECT
UNDERDRAIN WITH
INSERTA TEE
INV. OUT (12"): 1220.25
6" SOLID CLEANOUT
AT ENDS (TYP.)
SWALE 11
STORM MANHOLE 2
T/G: 1216.20
INV. IN: (18"): 1209.00
INV. IN (8"): 1212.75
INV. OUT (24") 1209.00
STORM MANHOLE 3
T/G: 1211.20
INV. IN: (24"): 1207.40
INV. IN (8"): 1207.40
INV. OUT (24") 1207.40
6" SOLID CLEANOUT
AT ENDS (TYP.)
EMERGENCY SPILLWAY
ELEV. 1222.90
20' LENGTH
5' WIDTH
12" HDPE
6" CLEAN OUT
STORM MANHOLE 1
T/G: 1216.80
INV. IN: (12"): 1213.90
INV. IN (8"): 1212.75
INV. OUT (18"): 1212.75
4" HDPE PERFORATED UNDERDRAIN
INV. 1220.25 @ 0.0%
RAIN GARDEN 3
6" CLEANOUT
18" HDPE
START NORTH 8" HDPE PERF. COLLECTOR PIPE
INV. 1215.10
TRANSITION TO SOLID 8" PIPE AT CURB
8" HDPE PERF. COLLECTOR PIPE @ 0.8%
8" TEE
INV. 1212.80
CONNECT TO COLLECTOR PIPE WITH INSERTA TEE (TYP.)
6" HDPE
4" HDPE PERF. UNDERDRAIN @ 1.0%
INV. 1213.65
WH2 FIELD
240'x330'
(NFHS)
ALT. SYNTHETIC TURF
24" HDPE
START NORTH 8" HDPE PERF. COLLECTOR PIPE
INV. 1209.77
TRANSITION TO SOLID 8" PIPE AT CURB
8" HDPE PERF. COLLECTOR PIPE @ 0.8%
CONNECT TO COLLECTOR PIPE WITH INSERTA TEE (TYP.)
6" HDPE
4" HDPE PERF. UNDERDRAIN @ 1.0%
INV. 1208.50
WH1 FIELD
240'x330'
(OHASS)
ALT. SYNTHETIC TURF
6" CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1211.00
6" CLEANOUT
INV. OUT 1221.45
RAIN GARDEN 4
4" HDPE PERF. UNDERDRAIN @ 1.0%
6" CLEANOUT WITH GRATE TOP
T/G: 1221.50
INV. OUT (6"): 1220.25
6" HDPE PERFORATED UNDERDRAIN @ 0.0%
INV. 1220.25
RAIN GARDEN 5
BEND 6" HDPE PERFORATED PIPE
3/4" PIPE W/SPIGOT 1.5' REVEAL
6" CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1216.00
8" HDPE PERF. COLLECTOR PIPE @ 0.6%
4" HDPE PERF. UNDERDRAIN @ 1.0%
INV. 1213.65
6" HDPE
8" INV. 1215.10
8" HDPE PERF. COLLECTOR PIPE @ 0.6%
8" INV. 1215.10
8" HDPE PERF. COLLECTOR PIPE @ 0.6%
4" HDPE PERF. UNDERDRAIN @ 1.0%
INV. 1208.50
6" HDPE
8" INV. 1209.77
10' SIDE YARD SETBACK
RIP RAP APRON 15
RIP RAP APRON 16
RIP RAP APRON 17
DAYLIGHT 6" PERF. UNDERDRAIN @ 1220.00
EMERGENCY SPILLWAY
ELEV. 1222.65
10' LENGTH
5' WIDTH
EMERGENCY SPILLWAY
ELEV. 1222.00
15' LENGTH
5' WIDTH
12" HDPE CULVERT
INV. IN: 1215.00
INV. OUT: 1214.50

NOTES:
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IS LOCATED ON SHEET C101.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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SUBMISSIONS

DATE	DESCRIPTION
05/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT

C106.3

INLET 5
TYPE M 2x4
T/G: 1208.7
INV. IN (24"): 1203.00
INV. IN (6"): 1203.00
INV. OUT (24"): 1203.00

6" YARD DRAIN WITH DOMED GRATE TOP
ELEV. 1207.50
INV. 1205.00

BEGIN SOLID 6" HDPE

PERF 6" HDPE UNDERDRAIN
INV. 1205.00 @ 0.0%
SEE PCSM DETAILS

STORMWATER BASIN 1

RIP RAP APRON
INV. 1208.00

6" ROOF DRAIN
INV. OUT 1210.00

6" CLEANOUT

BASIN 1
SPILLWAY
ELEV. 1208.40
35' LENGTH
10' WIDTH

CLEANOUT WITH GRATE TOP (TYP. OF 4)

T/G: 1206.00
INV. 12"=1204.50

12" SOLID HDPE MANIFOLD @ 5.0%

T/G: 1202.00
INV. 12"=1200.00

12" HDPE

T/G: 1199.00
INV. 12" 1197.00

6" CLEANOUT
INV. 1186.00

6" HDPE

6" HDOE ROOF COLLECTION

INLET 2
TYPE 4 4x4
WITH MANHOLE TOP
T/G: 1195.0
INV. IN (12") N: 1191.50
INV. IN (24") W: 1189.00
INV. IN (12") W: 1192.50
INV. IN (12") S: 1192.50
INV. OUT (24") 1189.00

MATERIAL STORAGE CONCRETE PAD

MAGNETIC

INLET 1
TYPE M 2x4
T/G: 1185.75
INV. IN (24"): 1182.75
INV. IN (6"): 1184.25
INV. OUT (24"): 1182.75

RIP RAP APRON 4
INV. 1175.00

SWALE 7

TOP OF WALK ABOVE CULVERT
ELEV. 1168.20

RIP RAP APRON 3

18" OUTLET PIPE
INV. OUT: 1167.50

RIP RAP APRON 2

2-10" HDPE CULVERTS
INV. IN: 1166.50
INV. OUT: 1166.00

INLET 2.1
TYPE M 2x2
T/G: 1195.7
INV. IN: (6"): 1194.00
INV. OUT: (12"): 1194.00

T/G: 1197.00
INV. 1195.00

4" HDPE

4" PERFORATED UNDERDRAIN @ 0%
INV. 1171.00
CONNECT TO OUTLET STRUCTURE

BASIN 3
OUTLET STRUCTURE
SEE PCSM DETAILS

6" CLEANOUT
(TYP OF 6)

BASIN 3
EMERGENCY SPILLWAY
ELEV. 1174.45
70' LENGTH
10' WIDTH

PROTECT PERIMETER OF ALL AREAS TO RECEIVE AMENDED SOIL (HATCHED AREA) WITH TEMPORARY CONSTRUCTION FENCING (TYP.)

STORMWATER BASIN 3

PLACE 12" AMENDED SOIL WHERE HATCHED (TYP. ALL BASIN AND RAIN GARDENS)

AGGREGATE DRIVING SURFACE

PARKING SWALE W/UNDERDRAINS)TYP. OF 4)
4" PERF PIPE INSTALLED WITHIN SWALE.
SLOPE TO MATCH SWALE GRADE AND PROVIDE MIN. 12" COVER. CONNECT TO 12" MANIFOLD PIPE WITH INSERTA TEE.

6" SOLID CLEANOUT AT ENDS (TYP.)

STORM MANHOLE 3
T/G: 1211.20
INV. IN: (24"): 1207.40
INV. IN (8"): 1207.40
INV. OUT (24") 1207.40

SWALE 8

SWALE 9

RIP RAP APRON 10

RIP RAP APRON 9

15" HDPE CULVERT
INV. IN: 1176.50
INV. OUT: 1176.00

15" OUTLET PIPE
INV. 1174.00

15" HDPE

RIP RAP APRON 11

8" TEE
INV. 1212.80

24" HDPE

START NORTH 8" HDPE PERF. COLLECTOR PIPE
INV. 1209.77

TRANSITION TO SOLID 8" PIPE AT CURB

8" HDPE PERF. COLLECTOR PIPE @ 0.6%

8" TEE
INV. 1207.45

6" HDPE

CONNECT TO COLLECTOR PIPE WITH INSERTA TEE (TYP.)

RIP RAP APRON 12
INV. OUT (24"): 1196.00

10" HDPE CULVERT
INV. IN: 1199.50
INV. OUT: 1196.00

RIP RAP APRON 13

STORM MANHOLE 4
T/G: 1211.20
INV. IN: (8"): 1207.40
INV. IN (24"): 1202.00
INV. OUT (24") 1202.00

BASIN 4
OUTLET STRUCTURE
SEE PCSM DETAILS

INLET 9
TYPE M 2x4
T/G: 1177.00
INV. IN (15"): 1174.75
INV. OUT (15"): 1174.75

4" PERFORATED UNDERDRAIN @ 0%
INV. 1179.00
CONNECT TO OUTLET STRUCTURE

6" CLEANOUT
(TYP OF 6)

STORMWATER BASIN 4

BASIN 4
EMERGENCY SPILLWAY
ELEV. 1183.50
45' LENGTH
10' WIDTH

WH1 FIELD
240'x330'
(90x105)
(ALT. SYNTHETIC TURF)

4" HDPE PERF. UNDERDRAIN @ 1.0%
INV. 1208.50

6" CLEANOUT WITH GRATE TOP (TYP. OF 4)
T/G: 1211.00

8" HDPE PERF. COLLECTOR PIPE @ 0.6%

4" DRAIN SUBGRADE DRAINS. PLACED FLAT ON SUBGRADE @ 16' O.C. ENTIRE SURFACE OF FIELD. DISCHARGE INTO COLLECTOR PIPES. (TYP. BOTH FIELDS)

8" INV. 1209.77

12" HDPE CULVERT
INV. IN: 1202.50
INV. OUT: 1202.00

RIP RAP APRON 14.1

RIP RAP APRON 14

SWALE 10

SWALE 12

RIP RAP APRON 15

RIP RAP APRON 16

12" HDPE CULVERT
INV. IN: 1215.00
INV. OUT: 1214.50

50' SIDE YARD SETBACK

20' FRONT YARD SETBACK

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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LEWISBURG, PA 17837
PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME

POST CONSTRUCTION STORMWATER MANAGEMENT

C106.4

NPDES BOUNDARY/LIMITS OF DISTURBANCE (55.27 AC.)

SWALE 3

ROCK FILTER (TYP.)

ROCK CONSTRUCTION ENTRANCE. (50' LONG)

SWALE 1

SWALE 2

SEE ELEC. PLANS FOR CONNECTION TO UTILITY SERVICE PROVIDER

RAIN GARDEN 1

30' SIDE YARD SETBACK

FUTURE PHASES
PHASE 1 BOUNDARY

TOPSOIL STOCKPILE

STORMWATER BASIN 2

30' WIDTH (MIN.) UAJA PUMP STATION ACCESS & SEWER EASEMENT AREA

SWALE 4

PARK STORAGE BUILDING 1680 S.F. ONE STORY F.F.E. 1188.00

36" DIVERSION BERM

INLET PROTECTION (TYP)

SWALE 6

SWALE 5

STORMWATER BASIN 1

RAIN GARDEN 2

ALL SEASON PAVILION 3710 S.F. ONE-STORY F.F.E. 1214.00

SWALE 7

PROTECT PERIMETER OF ALL AREAS TO RECEIVE AMENDED SOIL (HATCHED AREA) WITH TEMPORARY CONSTRUCTION FENCING (TYP.)

STORMWATER BASIN 3

SWALE 8

SWALE 9

RAIN GARDEN 3

EROSION CONTROL BLANKET ON ALL SLOPES >3:1. (TYP.)

STORMWATER BASIN 4

RAIN GARDEN 4

RAIN GARDEN 5

SWALE 11

SWALE 12

SWALE 10

36" DIVERSION COMPOST FILTER SOCK

NOTES:
THE PLAN LEGEND (EXISTING AND PROPOSED) IS LOCATED ON SHEET C101.

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

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DATE	DESCRIPTION
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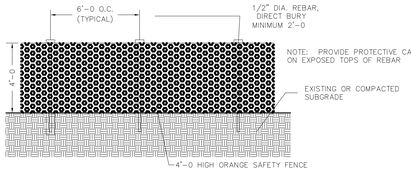
WHITEHALL ROAD REGIONAL PARK PHASE 1

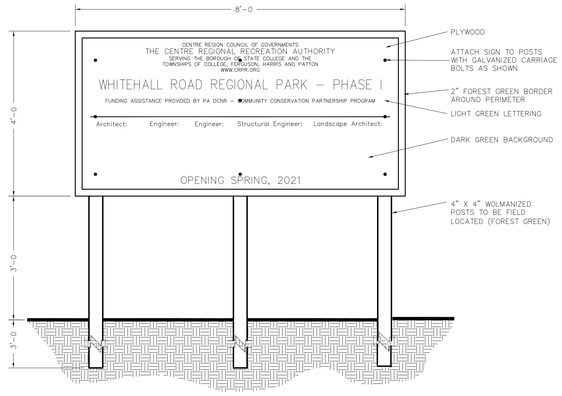
<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
EROSION AND SEDIMENTATION CONTROL PLAN

C107



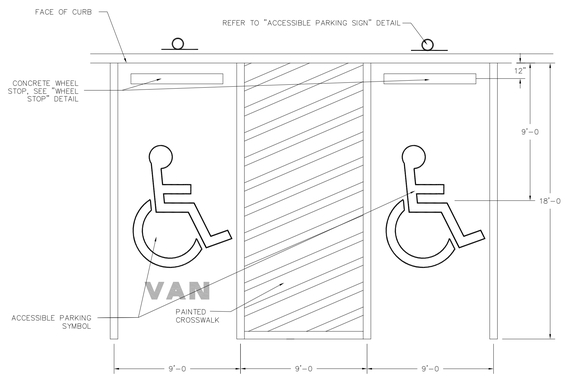
TEMPORARY CONSTRUCTION FENCE
N.T.S.



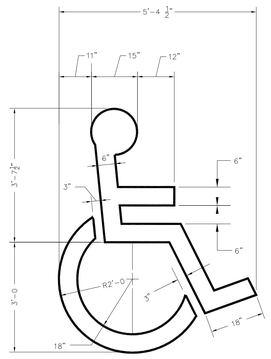
NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.

TEMPORARY CONSTRUCTION SIGN
N.T.S.

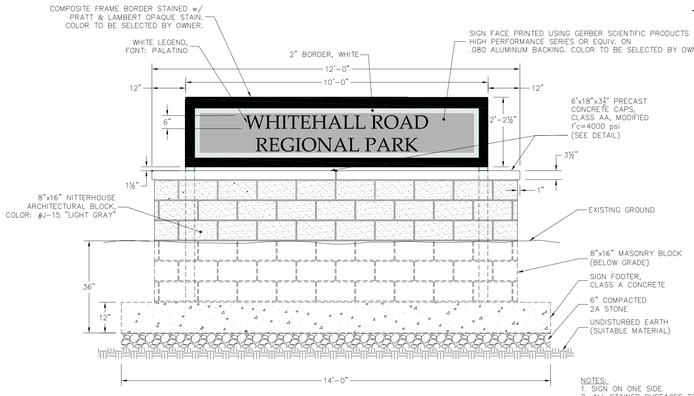
PAINT IS TO BE BLUE TRAFFIC PAINT APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN COMPLIANCE TO ALL LOCAL, STATE AND ADA REQUIREMENTS. TWO (2) COATS REQUIRED.



ACCESSIBLE PARKING AND LINESTRIPING
N.T.S.

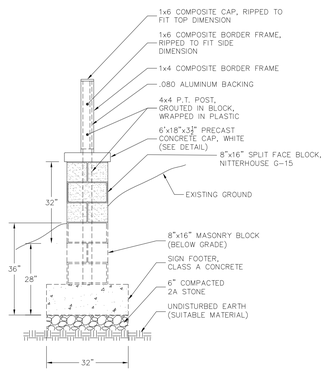


ACCESSIBLE PARKING SYMBOL
N.T.S.

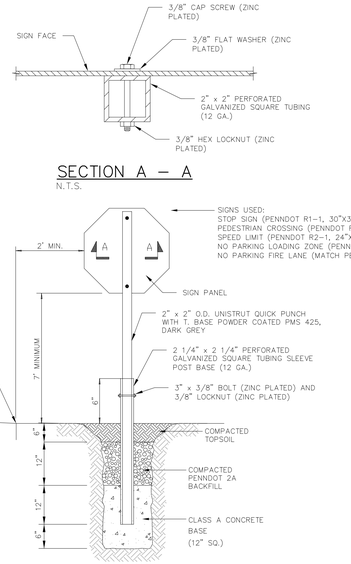


ENTRANCE SIGN DETAIL – FRONT
N.T.S.

NOTES:
1. SIGN ON ONE SIDE
2. ALL STAINED SURFACES TO BE TREATED AFTER
STAINING w/ THOMPSON'S WATER SEAL OR APPROVED EQUIVALENT.
3. ALL FRAMING FASTENERS TO BE COMPOSITE #9 SCREWS.
(PREDRILL HOLES FOR COMPOSITE SCREWS).

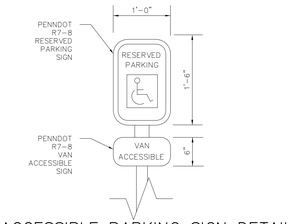


ENTRANCE SIGN DETAIL – SIDE
N.T.S.

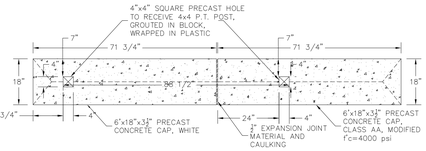


SECTION A – A
N.T.S.

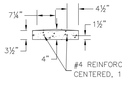
POST-MOUNTED SIGN BASE
N.T.S.



ACCESSIBLE PARKING SIGN DETAIL
N.T.S.

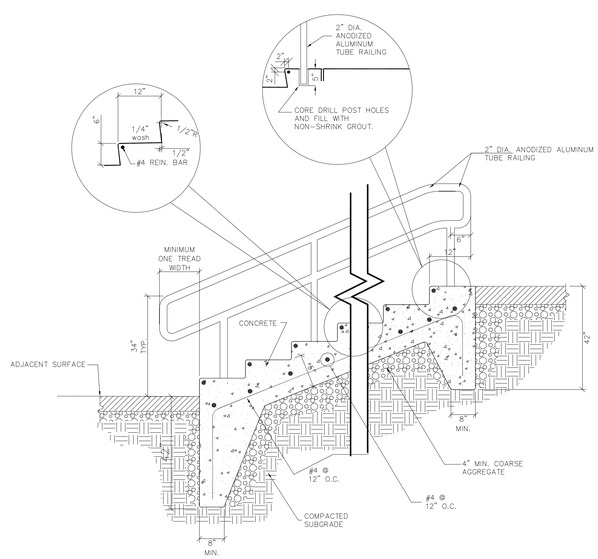


PRECAST CONCRETE CAP DETAIL
N.T.S.

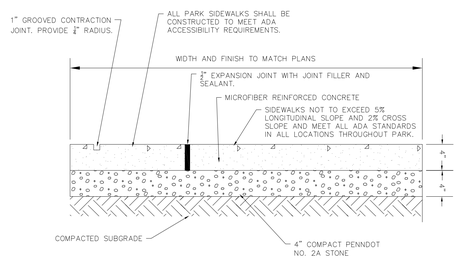


PRECAST CONCRETE CAP DETAIL – SIDE
N.T.S.

PRECAST CONCRETE CAP DETAIL – FRONT
N.T.S.



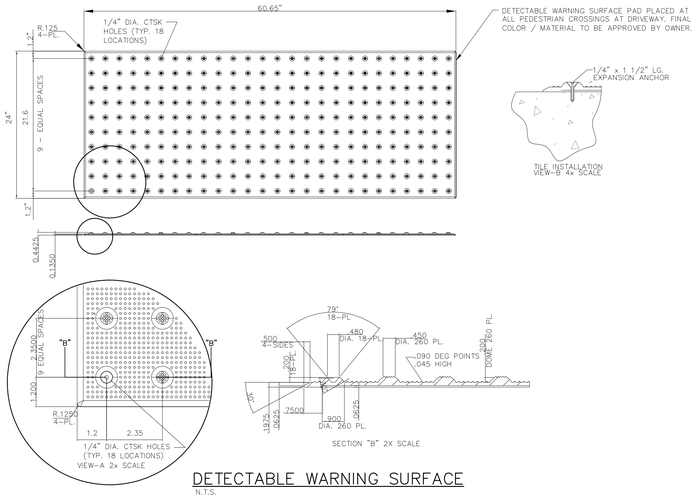
CONCRETE STEPS WITH HANDRAILS
N.T.S.



NOTES:

1. PROVIDE TOOLED CONTRACTION AT MAXIMUM 5'-0" SPACING.
2. PROVIDE 1/2" ISOLATION JOINTS AT MAXIMUM 20'-0" SPACING AND WHERE SIDEWALK ABUTS DRIVEWAYS, CURB AND ADJACENT STRUCTURES. INSTALL ASPHALT IMPREGNATED MATERIAL, CLOSED-CELL BACKER ROD AND POLYURETHANE SEALANT. PLACE PREMOLDED FILLER AND RECESS TOP OF FILLER ONE INCH FOR SEALANT.
3. TOOL ALL EDGES OF PAVING AND JOINTS WITH EDGING TOOL TO A ¼" RADIUS. REPEAT TOOLING AFTER APPLYING SURFACE FINISHES.
4. SLABS SHALL BE PLACED TO FULL THICKNESS IN ONE OPERATION WITHOUT CHANGE IN PROPORTIONS, RAMMED, SPADED OR VIBRATED, AND SCREEDED TO FINAL GRADE. WOOD FLOATED AND LIGHTLY TROWELED.
5. CONCRETE SHALL HAVE A MEDIUM-TO-COARSE BROOM FINISH PERPENDICULAR TO THE LINE OF TRAFFIC TO PRODUCE NON-SLIP SURFACE, UNLESS OTHERWISE INDICATED.
6. SYNTHETIC MICRO-FIBER REINFORCEMENT SHALL BE ALKALI-RESISTANT FIBRILLATED POLYPROPYLENE MICROFIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM C1116/C1116M, TYPE III, WITH FIBER LENGTH OF 1/2" TO 1 1/2" NOMINAL. FIBER REINFORCEMENT SHALL BE ADDED AT A MIX RATE AS RECOMMENDED BY MANUFACTURER.

CONCRETE SIDEWALK
N.T.S.



DETECTABLE WARNING SURFACE
N.T.S.

ALTERNATE: SYNTHETIC FIELD SECTION AND CURB DETAIL – SHOWING COLLECTOR DRAIN
N.T.S.

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SSE PROJECT No: 16-248
DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

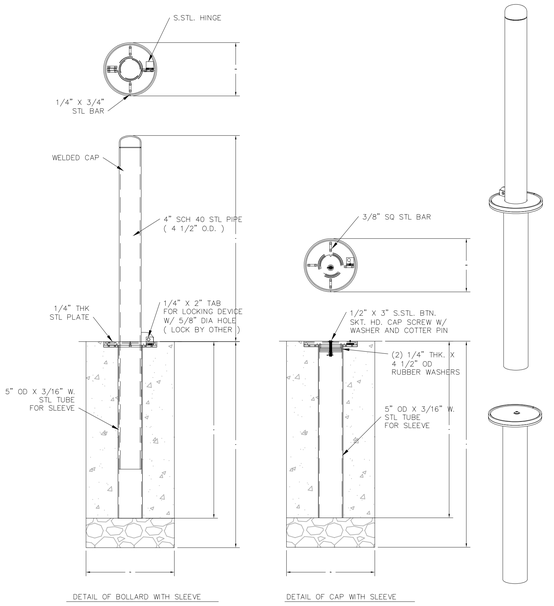
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE CONSTRUCTION DETAILS

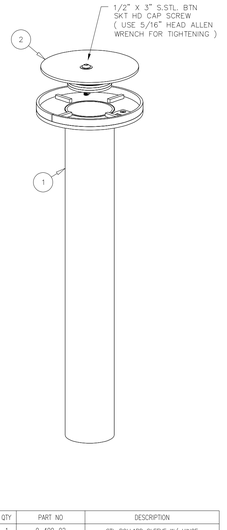
C108.1



NOTES

1.) STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.

2.) LOCKING DEVICE PROVIDED BY OTHER.



NOTES:

1. SET SLEEVE INTO FOOTER HOLDING PLUM, SQUARE AND HEIGHT SHOWN.
2. SLIDE BOLLARD INTO SLEEVE AFTER CONCRETE HAS HARDENED. BE SURE TO HAVE HINGE TAB SLIDE INTO BOLLARD BASE PLATE SLOT FOR LOCKING.
3. FOR USE OF CAP. WHEN BOLLARD IS REMOVED, PLACE CAP INTO SLEEVE. TIGHTEN CAP BY USING 1/2" X 3" BUTTON HEAD BOLT. THIS WILL COMPRESS THE RUBBER WASHERS THICKNESS AND EXPAND THE DIAMETER TO FIT SNUG TO SLEEVE.

ITEM	QTY	PART NO	DESCRIPTION
1	1	0-400-02	STL BOLLARD SLEEVE W/ HINGE
2	1	0-400-03	BOLLARD SLEEVE CAP ASSEMBLY
3	1	0-400-42-01/1SL	42" STL BOLLARD, EMBED FOR SLEEVE

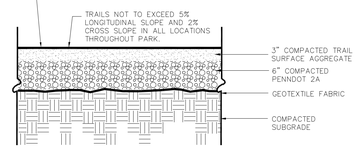
REMOVABLE BOLLARD
N.T.S.

TRAIL MIX SHALL MEET THE SPECIFICATIONS FOR "TRAIL AGGREGATE MIX" AS SPECIFIED IN THE "AGGREGATE HANDBOOK" PUBLISHED BY THE PENN STATE CENTER FOR DIRT & GRAVEL ROAD STUDIES.

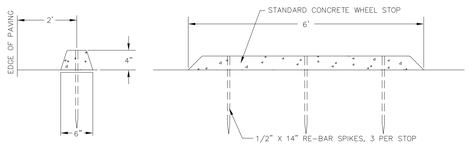
TRAIL AGGREGATE MIX GRADATION

Sieve Size	Percent Passing
1/2"	100%
3/8"	90-100
#4	50-85
#8	25-60
#16	25-50
#200	12-18

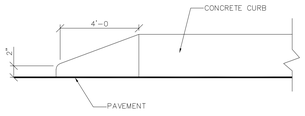
ALL PARK PATHWAYS SHALL BE CONSTRUCTED TO MEET ADA ACCESSIBILITY REQUIREMENTS.



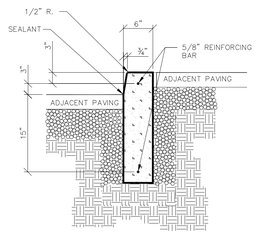
COMPACTED TRAIL AGGREGATE
N.T.S.



WHEEL STOP
N.T.S.

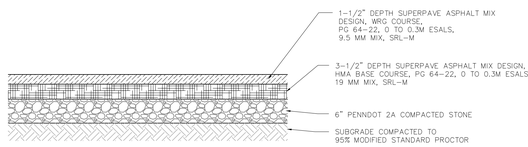


CURB END DETAIL
N.T.S.



*SLIP FORMING IS ACCEPTABLE. PROVIDE CURB W/ 6"X18" WITHOUT REINFORCING.

FULL DEPTH CONCRETE CURB
N.T.S.



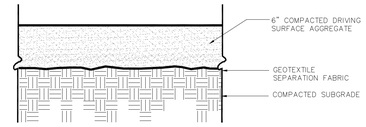
NOTES:
1. SAWCUT AND SEAL FINISHED JOINT PER PENNDOT PUB 408, SECTION 469, CURRENT EDITION.

STANDARD ASPHALT PAVEMENT SECTION
N.T.S.

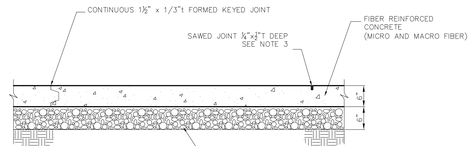
DRIVING SURFACE AGGREGATE MIX SHALL MEET THE SPECIFICATIONS FOR "DRIVING SURFACE AGGREGATE MIX" AS SPECIFIED AND PUBLISHED BY THE PENN STATE CENTER FOR DIRT & GRAVEL ROAD STUDIES.

DRIVING SURFACE AGGREGATE MIX GRADATION

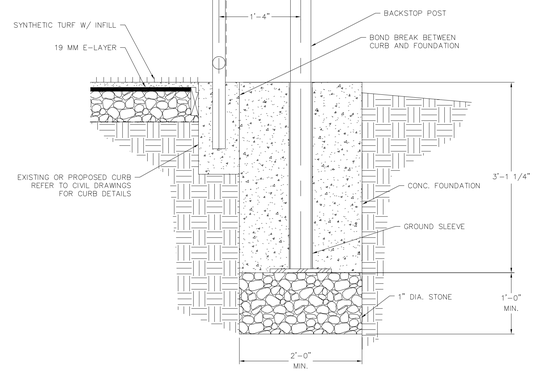
Seive Size	Specification Range
	% Passing
1.5"	100
0.75"	65-95
#4	30-65
#16	15-30
#200	10-15



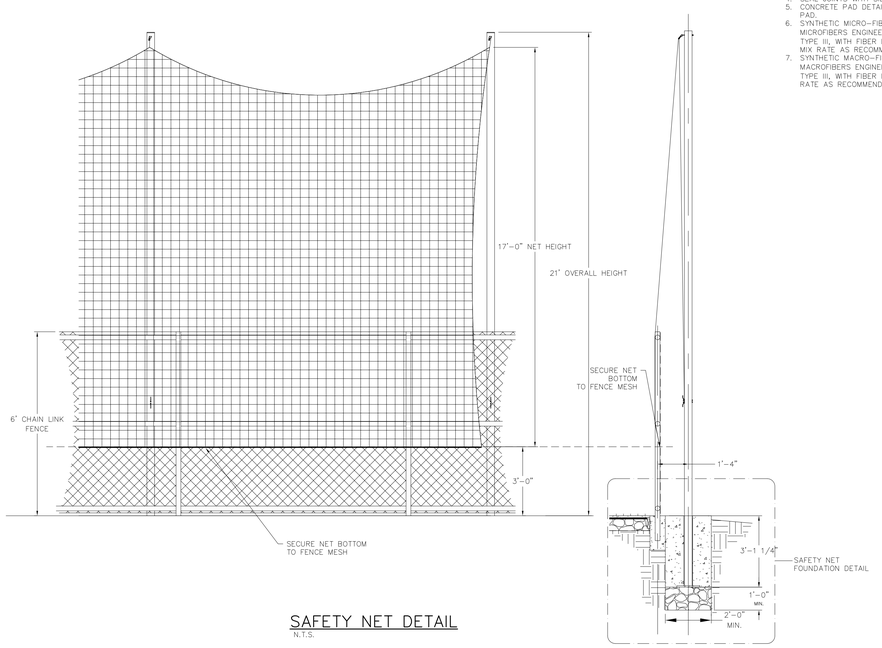
COMPACTED DRIVING SURFACE AGGREGATE
N.T.S.



SLAB-ON-GRADE DETAIL
N.T.S.



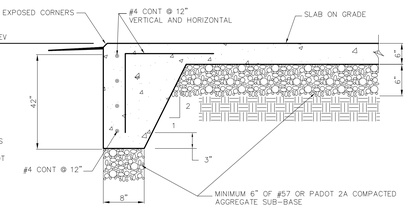
SAFETY NET FOUNDATION DETAIL
N.T.S.



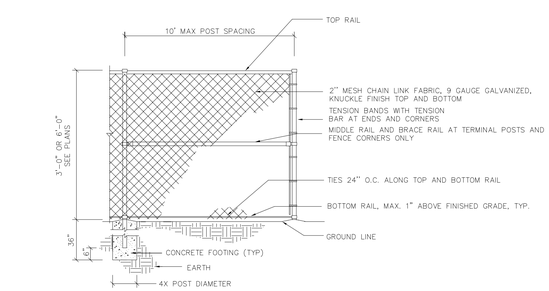
SAFETY NET DETAIL
N.T.S.

NOTES:
1. SLAB IS 6" NORMAL-WEIGHT FIBER REINFORCED CONCRETE ON 6" COMPACTED SUB-BASE.
2. AFTER FINISHING, SAW CUT CONTROL JOINTS AS SOON AS THE CONCRETE SURFACE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED BY THE BLADE.
3. LOCATION OF CONTROL JOINTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. LOCATE JOINTS EACH DIRECTION FROM ANY RE-ENTRANT CORNERS AND SPACE NO GREATER THAN 12'-0" ON CENTER IN EACH DIRECTION WITH FINISH CUTS RESULTING IN RECTANGLES WITH THE LENGTH OF THE LONGER SIDE NOT MORE THAN 1.5X THAT OF THE SHORTER SIDE.
4. SEAL JOINTS WITH SILICONE BASED SEALANT AFTER SLAB HAS CURED FOR 7 DAYS.
5. CONCRETE PAD DETAIL APPLIES TO THE DUMPSTER PAD, TRANSFORMER PADS, AND MATERIAL STORAGE PAD.
6. SYNTHETIC MICRO-FIBER REINFORCEMENT SHALL BE ALKALI-RESISTANT FIBRILLATED POLYPROPYLENE MICROFIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM C1116/C1116M, TYPE III, WITH FIBER LENGTH OF 1/2" TO 1 1/2" NOMINAL. FIBER REINFORCEMENT SHALL BE ADDED AT A MIX RATE AS RECOMMENDED BY MANUFACTURER FOR SPECIFIC PROJECT CONDITIONS.
7. SYNTHETIC MACRO-FIBER REINFORCEMENT SHALL BE ALKALI-RESISTANT FIBRILLATED POLYPROPYLENE MACROFIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM C1116/C1116M, TYPE III, WITH FIBER LENGTH OF 2" LONG NOMINAL. FIBER REINFORCEMENT SHALL BE ADDED AT A MIX RATE AS RECOMMENDED BY MANUFACTURER FOR SPECIFIC PROJECT CONDITIONS.

TYPICAL CONCRETE PAD
N.T.S.



SLAB-ON-GRADE PERIMETER TURN-DOWN DETAIL
N.T.S.

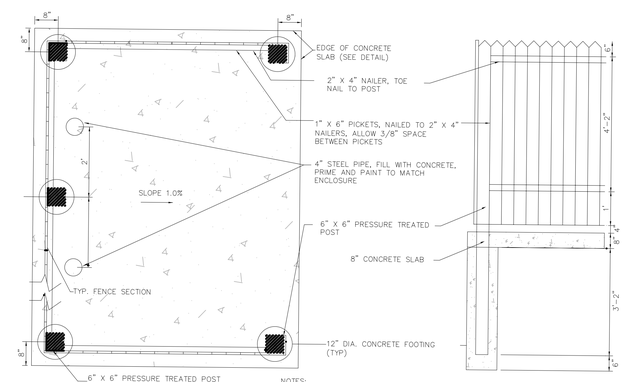


PIPE SIZES FOR VARIOUS FENCE MEMBERS

HEIGHT	CORNER POST	LINE POST	TOP RAIL	MIDDLE RAIL	BRACE RAIL	BOTTOM RAIL	FOOTING DEPTH
≤6'	2 1/2"	2"	1 5/8"	1 5/8"	1 5/8"	1 5/8"	36"
10'	3"	2 1/2"	1 5/8"	1 5/8"	1 5/8"	1 5/8"	36"

ALL PIPE SIZES ARE OUTSIDE DIAMETER, TYPE 1 SCHEDULE 40

CHAIN LINK FENCE
N.T.S.



NOTES:
1. SEE PLAN FOR LOCATION AND PAD DIMENSIONS
2. SLAB AND POST EMBEDMENT SHALL BE 3,000 PSI CONCRETE.

DUMPSTER SCREEN DETAIL
N.T.S.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

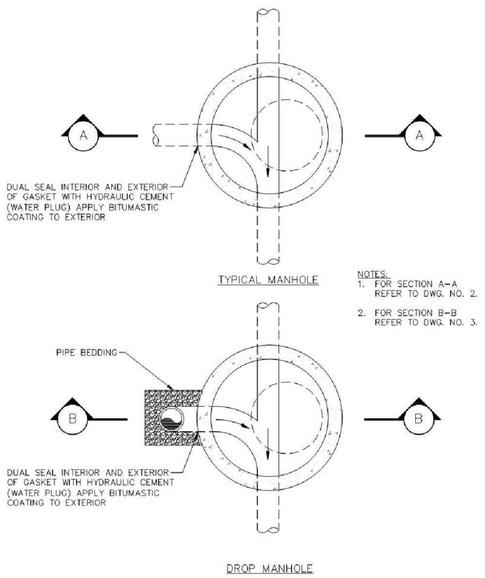
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

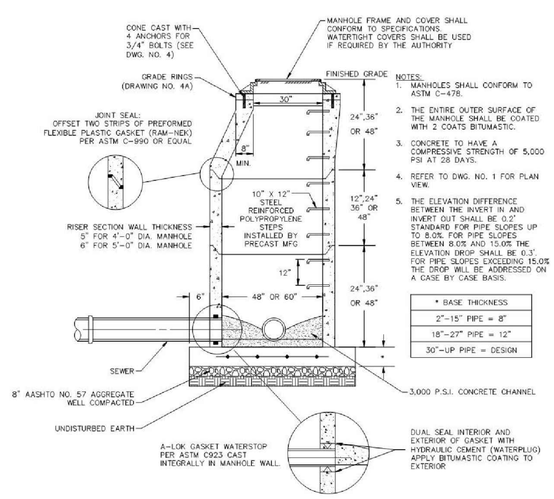
SHEET NAME
SITE CONSTRUCTION DETAILS

C108.2



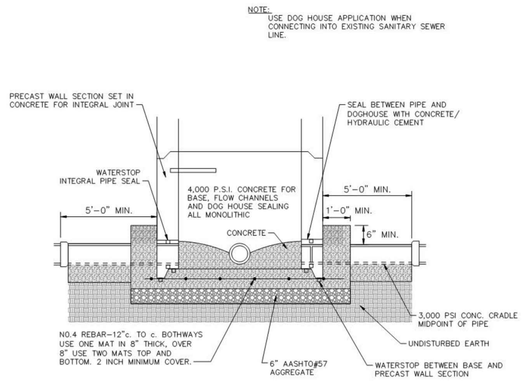
SECTIONAL PLAN VIEW OF TYPICAL AND DROP MANHOLES

NOT TO SCALE

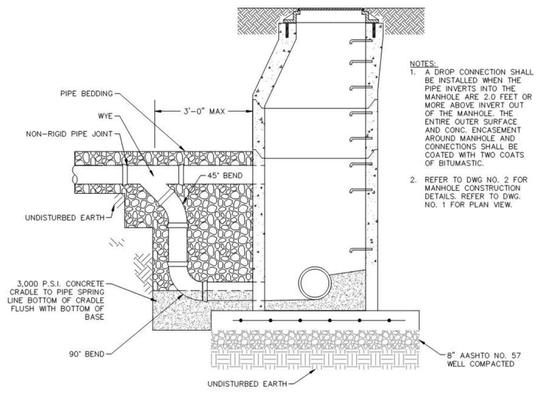


TYPICAL MANHOLE SECTION A-A PRECAST BASE AND WALL SECTIONS

NOT TO SCALE

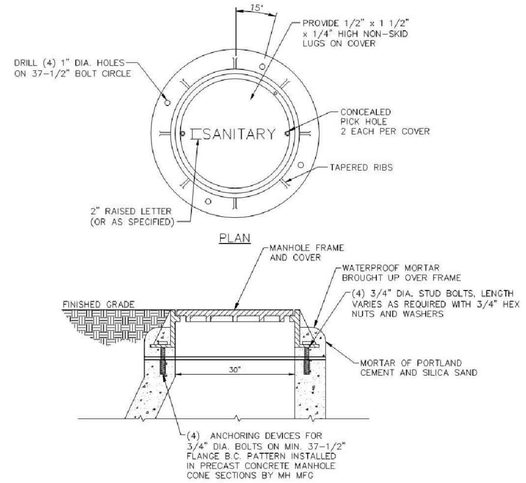


FIELD POURED BASE WITH PRECAST WALL SECTIONS



TYPICAL DROP MANHOLE SECTION B-B PRECAST BASE AND WALL SECTIONS

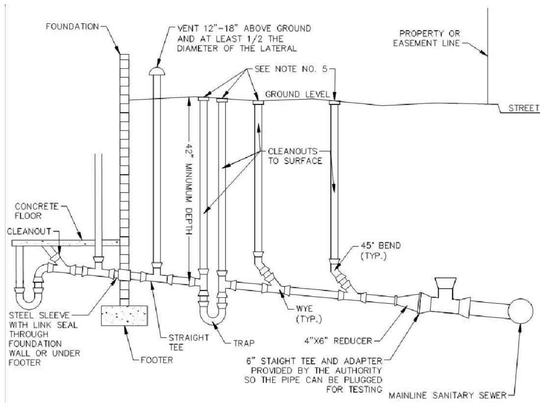
NOT TO SCALE



NOTES:
1. THE WORD "SANITARY" MUST BE ON THE MANHOLE COVER.
2. PRECAST CONCRETE RINGS ARE REQUIRED ONLY WHERE MANHOLE FRAME AND COVER MUST CONFORM TO GRADE OF STREET. THE TOPS OF ALL WATERTIGHT MANHOLE FRAMES AND COVERS SHALL BE NO LESS THAN (1) FOOT ABOVE GRADE AS DIRECTED BY AUTHORITY. MAX. HEIGHT ADJUSTMENT W/RINGS IS 12".

MANHOLE FRAME AND COVER INSTALLATION FOR PRECAST CONCRETE MANHOLES

NOT TO SCALE

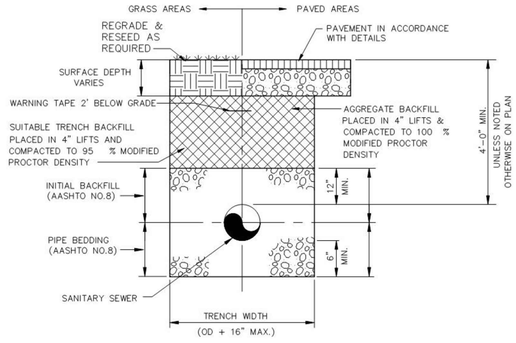


LATERAL SPECIFICATIONS:
1. 4" DIAMETER IS THE MINIMUM SIZE. LARGER SIZES WILL BE SPECIFIED BY THE AUTHORITY WHEN THE AMOUNT OF FLOW WARRANTS IT.
2. SLOPE SHALL BE 1/4" PER FOOT UNLESS APPROVED OTHERWISE BY THE AUTHORITY.
3. CLEANOUTS MUST BE INSTALLED EVERY 50' ON 4" PIPE AND EVERY 100' ON 6" PIPE.
4. LATERALS SHALL BE LAID IN AGGREGATE CUSHION AND BEDDING, REFER TO STANDARD PIPE TRENCH DETAIL
5. CLEANOUT TERMINAL(S) SHALL HAVE TREATMENT AT RESPECTIVE LOCATION. REFER TO DWG. NO.'S 10 & 10A.
6. ALL PIPING MATERIALS INCLUDING TRAPS FOR GRAVITY APPLICATIONS SHALL BE SCHEDULE 40 PVC. ANSI/ASTM D2665.
7. ALL SCHEDULE 40 PVC PIPE USED FOR PRESSURE APPLICATIONS MAY BE STAMPED ASTM D2665 BUT MUST ALSO INCLUDE A SECOND NUMBER, EITHER ASTM D1785 OR ASTM F480, WHICH ARE PRESSURE DESIGNATIONS.

INSPECTION:
1. WORK MUST BE INSPECTED AND TESTED BEFORE BACKFILLING.
2. THERE IS NO CHARGE FOR ONE-TIME INSPECTION UNLESS THE LATERAL IS LONGER THAN 150' AND/OR IF THE PIPE IS MORE THAN 4" IN DIAMETER.
3. INSPECTIONS REQUIRING MORE THAN ONE VISIT TO THE SITE WILL BE BILLED AT THE RATE IN EFFECT AT THE TIME OF INSPECTION.

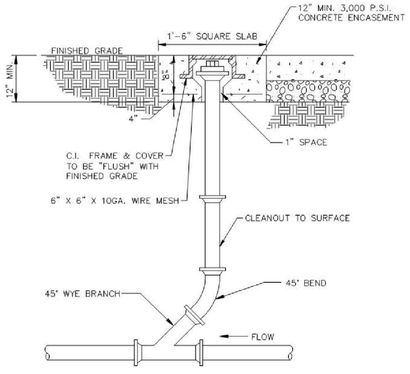
TYPICAL SANITARY SEWER LATERAL

NOT TO SCALE



PIPE TRENCH

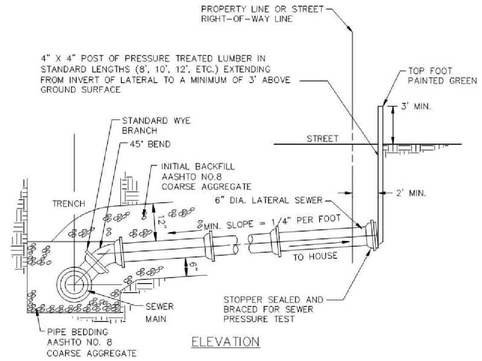
NOT TO SCALE



NOTES:
1. DETAILS FOR CLEANOUTS IN PRIVATE, RESIDENTIAL LAWN OR NON-TRAFFIC AREAS ARE THE SAME EXCEPT THE CONCRETE ENCASEMENT MAY BE OMITTED.

CLEANOUT CONSTRUCTION DETAIL FOR PRIVATE COLLECTION SYSTEM

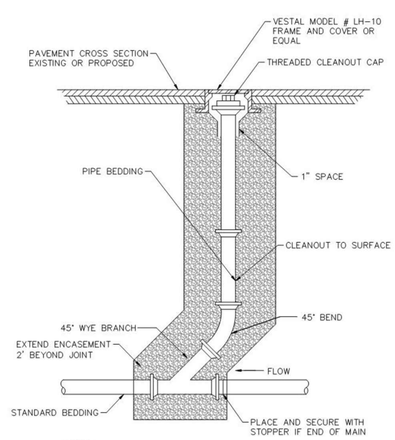
NOT TO SCALE



NOTES:
1. IN THE CONSTRUCTION OF LATERALS, THE CONTRACTOR MUST COORDINATE HIS EFFORTS WITH THE AUTHORITY SO AS TO PROVIDE THE PROPER SERVICE TO THE PROPERTY OWNERS. IF IN THE JUDGEMENT OF THE AUTHORITY THE LATERAL CONSTRUCTED BY THE CONTRACTOR DOES NOT PROVIDE ADEQUATE SERVICE TO THE PROPERTY OWNER, THE CONTRACTOR SHALL RECONSTRUCT THE LATERAL TO THE PROPER GRADE AT HIS (CONTRACTOR) EXPENSE. IT IS THE POLICY OF THE AUTHORITY TO PROVIDE BASEMENT SERVICE (LOWEST ELEVATION) TO ALL LOTS.
2. CONCRETE ENCASE LATERAL FOR A DISTANCE OF 5' ON EITHER SIDE OF A WATER OR STORM SEWER CROSSING. ENCASEMENT SHALL BE 6" MIN AROUND PIPE WITH 3,000 PSI CONCRETE.

LATERAL AND MARKER DETAIL

NOT TO SCALE



NOTES:
1. REFER TO DWG. NO. 4 FOR COVER INSTALLATION DETAIL.

CLEANOUT CONSTRUCTION DETAIL FOR PAVED AREAS

NOTE:
DETAILS SHOWN ARE UNIVERSITY AREA JOINT AUTHORITY (UAJA) STANDARDS DETAILS. REFER TO UAJA STANDARD SPECIFICATIONS APPENDIX B FOR ADDITIONAL INFORMATION.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

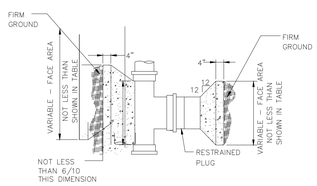
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

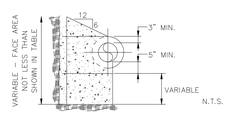
SHEET NAME

UAJA STANDARD SANITARY SEWER DETAILS

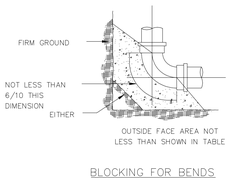
C108.3



BLOCKING FOR TEES AND PLUGS



APPLICABLE TO TEES, WYES, AND BENDS



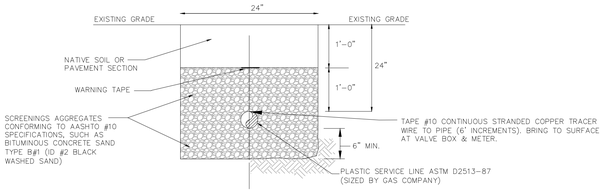
BLOCKING FOR BENDS

NOTES:

1. ALL TEES, WYES, CROSSES, PLUGS, AND BENDS OF 10° OR MORE SHALL BE BLOCKED AGAINST FIRM EARTH WITH CONCRETE.
2. EARTH PRESSURE FIGURED AT 4,000 PSF, IF EARTH ENCOUNTERED WILL NOT WITHSTAND THIS PRESSURE, THE AREA OF THE BLOCK MUST BE INCREASED PROPORTIONATELY, CALCULATIONS ARE BASED ON 225 PSI OR 150 # OF WORKING PRESSURE PLUS 50% WATER HAMMER FOR SIZES 4" TO 24" INCLUSIVE.
3. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESIVE STRENGTH OF 4,000 PSI.

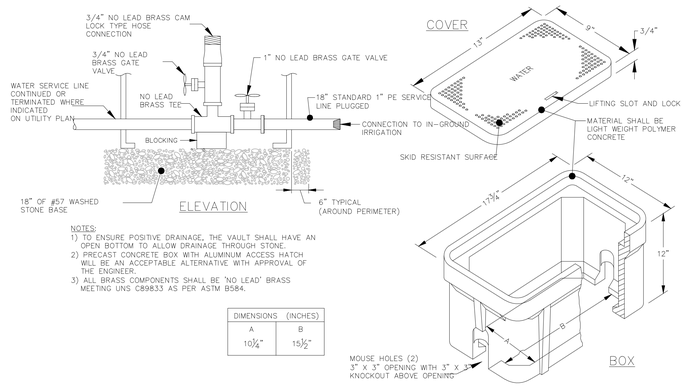
PIPE SIZE (IN.)	AREA SQ."	TOTAL FORCE (LBS)	AREA OF BLOCK IN SQUARE FEET				
			TEE & PLUGS	90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS
4	13	2,900	1.0	1.0	1.0	1.0	1.0
6	29	6,500	1.7	2.3	1.3	1.0	1.0
8	53	12,000	3.0	4.1	2.2	1.2	1.0

CONCRETE THRUST BLOCKS
N.T.S.



NOTES:
1. LOCATOR TRACER WIRE AND WARNING TAPE INSTALLED BY CONTRACTOR.
2. 6" OF SCREENINGS AT BOTTOM OF DITCH MUST BE INSTALLED BY CONTRACTOR PRIOR TO INSTALLATION OF THE SERVICE.
3. CONTRACTOR MUST INSTALL MINIMUM OF 12" OF SCREENINGS OVER TOP OF GAS SERVICE AT TIME OF INSTALLATION.
4. WARNING TAPE MUST BE INSTALLED BY CONTRACTOR 12" BELOW GRADE.
5. AT LEAST 3 WORKING DAYS BEFORE YOU DIG CALL 1–800–242–1776 FOR LOCATION OF UTILITIES.
6. IF YOU HIT A GAS LINE, IMMEDIATELY CALL COLUMBIA GAS.

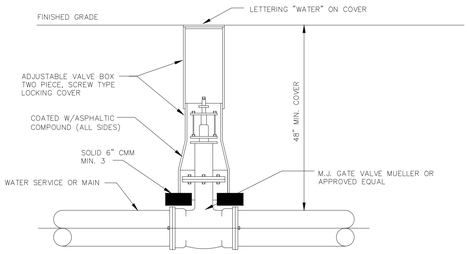
GAS SERVICE TRENCH
N.T.S.



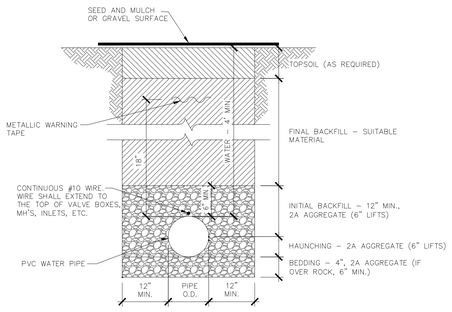
NOTES:
1) TO ENSURE POSITIVE DRAINAGE, THE VAULT SHALL HAVE AN OPEN BOTTOM TO ALLOW DRAINAGE THROUGH STONE.
2) PRECAST CONCRETE BOX WITH ALUMINUM ACCESS HATCH WILL BE AN ACCEPTABLE ALTERNATIVE WITH APPROVAL OF THE ENGINEER.
3) ALL BRASS COMPONENTS SHALL BE 'NO LEAD' BRASS MEETING UNS C89833 AS PER ASTM B584.

DIMENSIONS (INCHES)	
A	B
10¾"	15½"

IRRIGATION HOSE BIB
N.T.S.

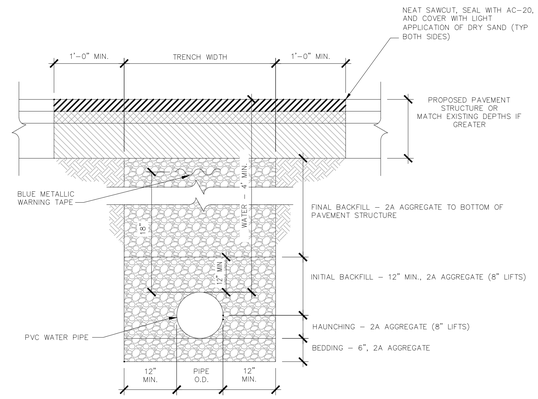


TYPICAL GATE VALVE AND VALVE BOX DETAIL
N.T.S.



NOTES:
1. WATER LINE MAXIMUM DEPTH 8' TO CROWN OF PIPE.
2. CLAY DIKES INSTALLED ON PIPE RUNS OVER 300' IN LENGTH.

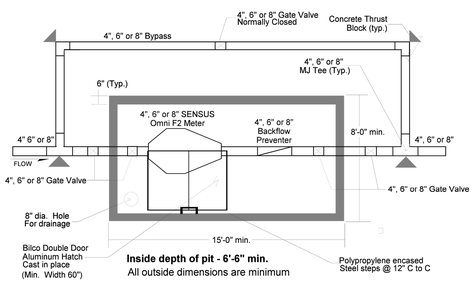
WATERLINE TRENCH IN NON–PAVED AREAS
N.T.S.



NOTES:
1. WATER LINE MAXIMUM DEPTH 8' TO CROWN OF PIPE.
2. CLAY DIKES INSTALLED ON PIPE RUNS OVER 300' IN LENGTH.

WATERLINE TRENCH IN PAVED AREAS
N.T.S.

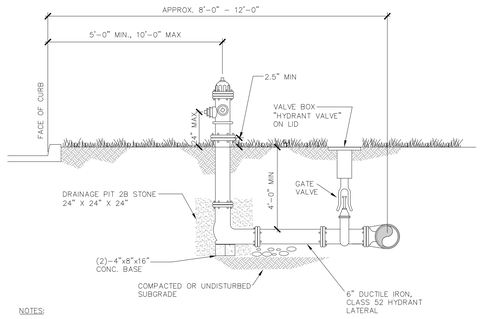
4", 6" or 8" DOMESTIC & FIRE LINE COMBINATION METER PIT- Using Omni Meter



*4", 6" or 8" SENSUS OMNI F2 Meter to be purchased by owner with delivery to the job site and installation by owner. Authority personnel will inspect the installation.

NOTES:
1. Mega-lug glands must be used on all fittings and valves.
2. Concrete Thrust Blocks must be used on all underground bends & tee's.

WATER METER PIT
N.T.S.



NOTES:

1. FIRE HYDRANT SHALL BE AMERICAN FLOW CONTROL NO. B–62–B–5 WITH TRAFFIC FEATURE.
2. ALL JOINTS SHALL BE MADE WITH "MEGALUG" RESTRAINTS.
3. PROVIDE BANDS/FITTINGS AS REQUIRED (AFTER TEE) FOR PROPER DEPTH OF BURIAL AND PLUMBNESS OF HYDRANT.

FIRE HYDRANT
N.T.S.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

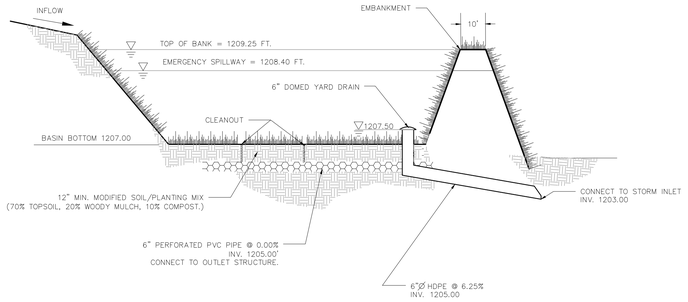
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

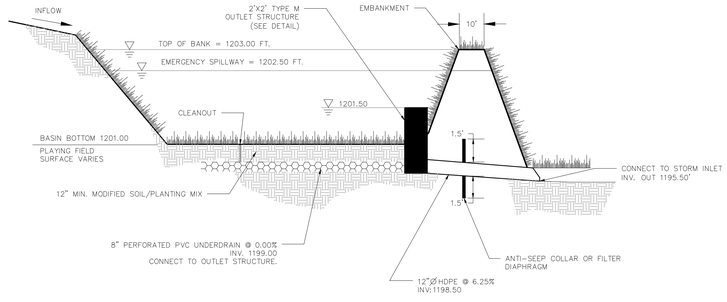
SHEET NAME
SITE UTILITY DETAILS

C108.4



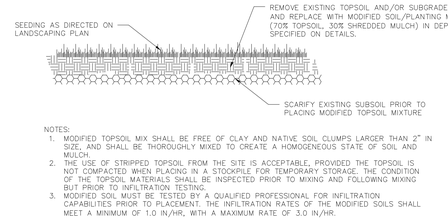
STORMWATER BASIN 1 DETAIL

N.T.S.



STORMWATER BASIN 2 DETAIL

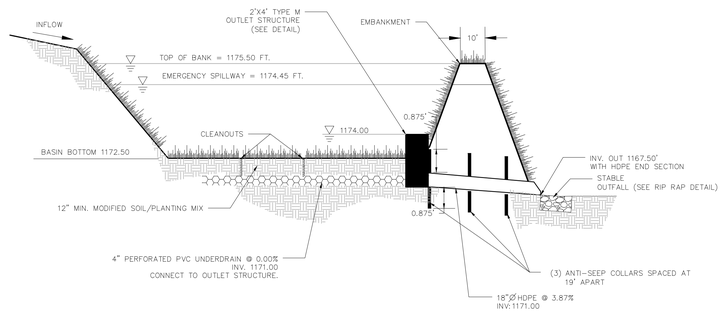
N.T.S.



NOTES:
1. MODIFIED TOPSOIL MIX SHALL BE FREE OF CLAY AND NATIVE SOIL CLUMPS LARGER THAN 2" IN SIZE, AND SHALL BE THOROUGHLY MIXED TO CREATE A HOMOGENEOUS STATE OF SOIL AND MULCH.
2. THE USE OF STRIPPED TOPSOIL FROM THE SITE IS ACCEPTABLE, PROVIDED THE TOPSOIL IS NOT COMPACTED WHEN PLACING IN A STOCKPILE FOR TEMPORARY STORAGE. THE CONDITION OF THE TOPSOIL MATERIALS SHALL BE INSPECTED PRIOR TO MIXING AND FOLLOWING MIXING BUT PRIOR TO INFILTRATION TESTING.
3. MODIFIED SOIL MUST BE TESTED BY A QUALIFIED PROFESSIONAL FOR INFILTRATION CAPABILITIES PRIOR TO PLACEMENT. THE INFILTRATION RATES OF THE MODIFIED SOILS SHALL MEET A MINIMUM OF 1.0 IN./HR, WITH A MAXIMUM RATE OF 3.0 IN./HR.

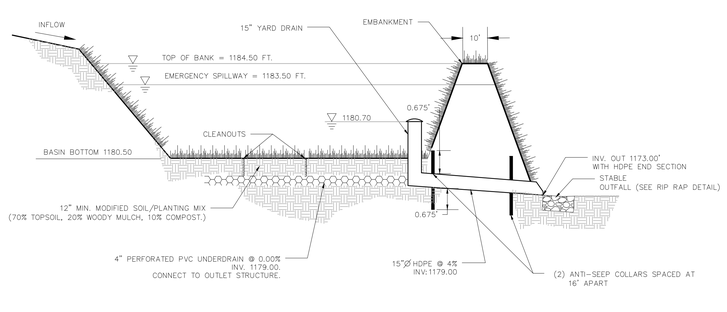
MODIFIED TOPSOIL

N.T.S.



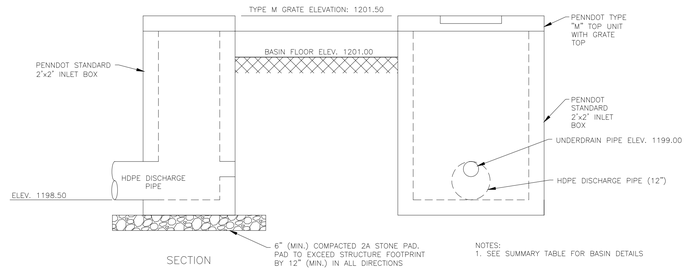
STORMWATER BASIN 3 DETAIL

N.T.S.



STORMWATER BASIN 4 DETAIL

N.T.S.

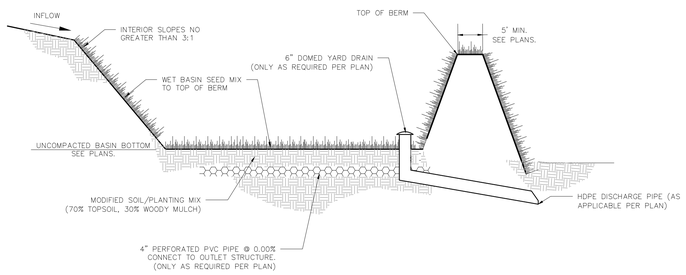


SECTION

NOTES:
1. SEE SUMMARY TABLE FOR BASIN DETAILS

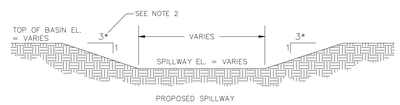
STORMWATER BASIN 2 OUTLET STRUCTURE

N.T.S.



RAIN GARDEN TYPICAL DETAIL

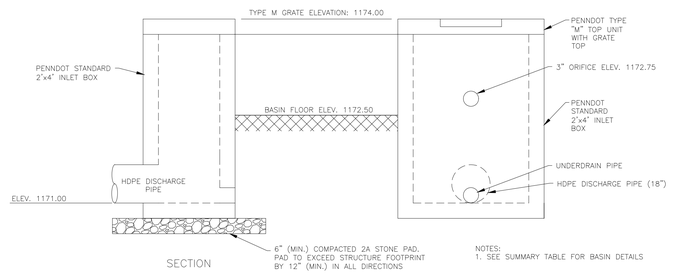
N.T.S.



NOTES:
1. SEE BASIN CHART FOR DIMENSIONS FOR EMERGENCY SPILLWAYS.
2. FOR SPILLWAYS THAT CROSS OR ARE LOCATED WITHIN AREAS OF WALKWAYS AND/OR DRIVING SURFACES, THE SPILLWAY BANKS SHALL NOT EXCEED 5%.

STORMWATER BASIN TYPICAL SPILLWAY CHART & DETAIL

N.T.S.



SECTION

NOTES:
1. SEE SUMMARY TABLE FOR BASIN DETAILS

STORMWATER BASIN 3 OUTLET STRUCTURE

N.T.S.

Stormwater Basin / Rain Garden Details																
	Basin Floor Elevation (sf) ("A")	Top of Outlet Structure Elev. ("B")	Underdrain Elevation ("C")	Basin Discharge Pipe - Size ("D")	Basin Discharge Pipe - Upstream Inv. ("D")	Outlet Structure Type/Size ("E")	Basin Bottom Area (sf)	Basin Top Area (sf)	Total Basin Storage (cf)	Basin Storage (Below Outlet Structure) (cf)	Top of Storage Elev. (ft)	Total BMP Depth (ft)	Spillway Elev. (ft)	Spillway Width (ft)	Spillway Length (ft)	Modified Top Soil Depth	Infiltration
Basin 1	1207.00	1207.50	1205.00	6"	1205.00	Domed Yard Drain - 6"	3,000	4,550	8,494	1,586	1209.25	2.25	1208.40	10	35	12"	Yes
Basin 2	1201.00	1201.50	1199.00	12"	1198.50	2'x2'	86,000	97,700	89,513	21,670	1203.00	2.00	1202.50	10	40	N/A	
Basin 3	1172.50	1174.00	1171.00	18"	1171.00	2'x4'	5,270	21,600	36,618	12,693	1175.50	3.00	1174.45	10	70	12"	Yes
Basin 4	1180.50	1180.70	1179.00	15"	1179.00	Domed Yard Drain - 15"	1,050	22,200	51,583	811	1184.50	4.00	1183.50	10	45	12"	
Rain Garden 1	1181.00	N/A	N/A	N/A	N/A	N/A	2,342	4,420	9,348	6,581	1184.10	3.10	1183.40	10	30	24"	Yes
Rain Garden 2	1216.50	1216.50	1215.00	24"	1213.00	2'x2'	3,110	7,900	5,868	0	1217.60	1.10	1217.30	5	10	12"	
Rain Garden 3	1222.00	1222.00	1220.25	12"	1220.25	Domed Yard Drain - 12"	607	2,800	2,726	0	1223.60	1.60	1222.90	5	20	12"	
Rain Garden 4	1221.50	1221.50	1220.25	6"	1220.25	Domed Yard Drain - 6"	10	7,450	5,390	N/A	1223.55	2.05	1222.65	5	10	12"	
Rain Garden 5	1221.00	N/A	1220.25	N/A	N/A	N/A	931	4,200	5,066	N/A	1223.00	2.00	1222.00	5	15	12"	

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

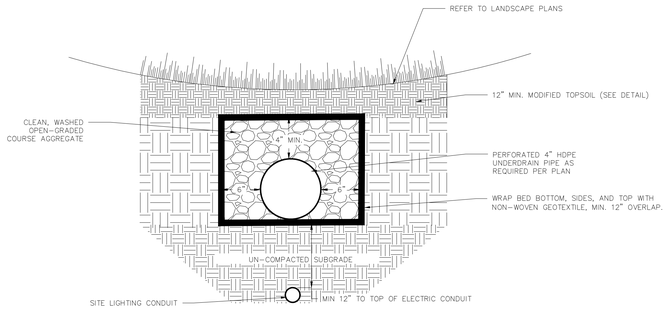
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

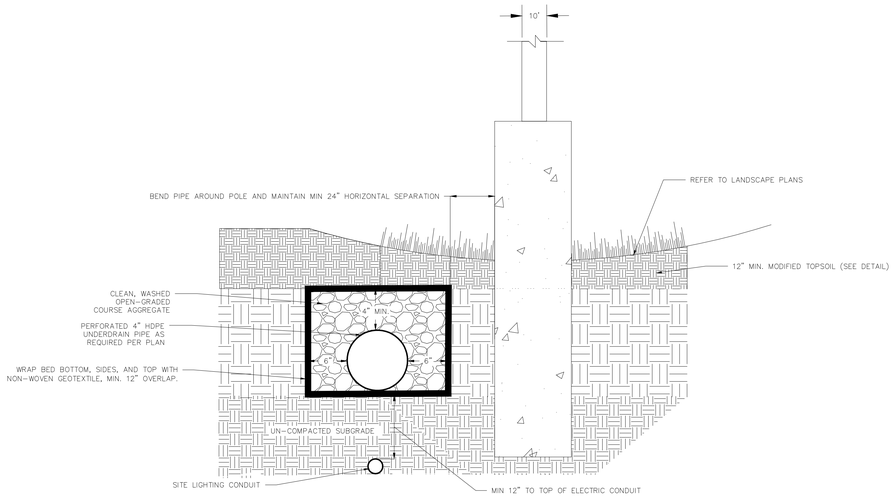
<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

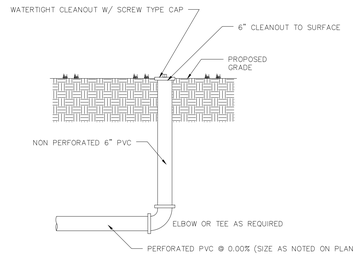
C108.5



PARKING LOT SWALE & UNDERDRAIN DETAIL
N.T.S.

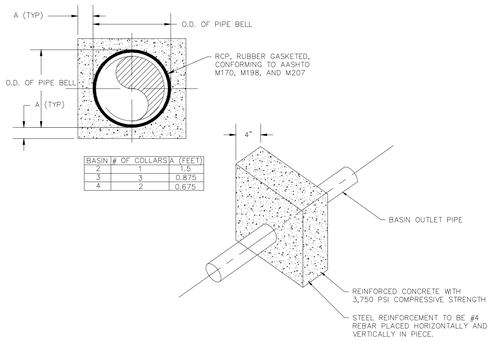


PARKING LOT SWALE & UNDERDRAIN DETAIL AT LIGHT POLE
N.T.S.



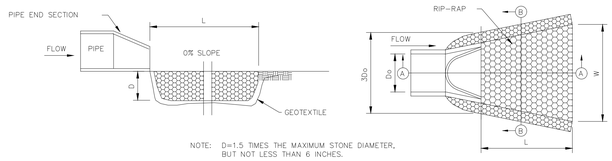
NOTES:
1. PROVIDE OPEN GRATE TOP WHERE NOTED ON PLANS.
2. PROVIDE FLAT SCREW TOP IN PLAYING FIELD AREAS.
3. IN PAVED AREAS, PROVIDE TRAFFIC RATED CLEANOUT TOP ENCASED IN 4" CONCRETE ALL SIDES.

CLEANOUT DETAIL
N.T.S.



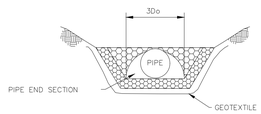
BASIN #	OF COLLARS	A (FEET)
2	1	1.5
3	3	0.875
4	2	0.675

CONCRETE ANTI-SEEP COLLAR DETAIL
N.T.S.



NOTE: D=1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

NOTES:
1. ROCK WILL BE PLACED TO FULL COURSE THICKNESS IN ONE CONTINUOUS OPERATION TO PREVENT SEGREGATION OF MATERIALS. INDIVIDUAL ROCKS MAY BE REARRANGED, AND VOIDS FILLED WITH HAND PLACED SMALLER ROCK, TO ACHEIVE A UNIFORM ROCK BLANKET.
2. NO ROCK PIECES SHALL HAVE A LENGTH EXCEEDING THREE TIMES ITS WIDTH OR DEPTH.
3. ROCK SHALL BE ANGULAR, CRUSHED AND HAVE A UNIT WEIGHT OF 165 LBS./C.F.

RIPRAP APRON NO.	W (FT)	L (FT)	SIZE OF ROCK	MIN ROCK DEPTH (D)	FLOW (CFS)
1	12.5	10	R-3	18"	6
1.1	8.5	6	R-3	18"	3
1.2	8.5	6	R-3	18"	3
2	32.5	28	R-6	36"	52
3	32.5	28	R-6	36"	52
4	30	24	R-6	36"	47
5	11	8	R-3	18"	5
6	11	8	R-3	18"	5
7	15	10	R-3	18"	7
8	15	10	R-3	18"	7
9	20	16	R-4	18"	15
10	11.75	8	R-3	18"	3
11	11.75	8	R-3	18"	3
12	24	18	R-4	18"	30
13	10.5	8	R-3	18"	5
14	9	6	R-3	18"	4
14.1	9	6	R-3	18"	4
15	9	6	R-3	18"	3
16	9	6	R-3	18"	3
17	7.5	6	R-3	18"	3
18	14	12	R-4	18"	7

RIP-RAP APRON DETAIL
N.T.S.

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SSE PROJECT No: 16-248
DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

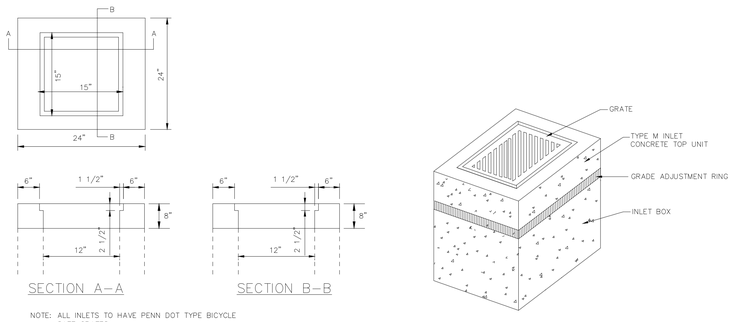
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

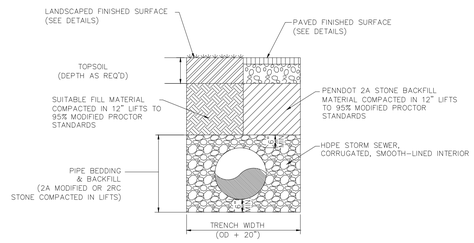
C108.6



NOTE: ALL INLETS TO HAVE PENN DOT TYPE BICYCLE SAFE GRATES.

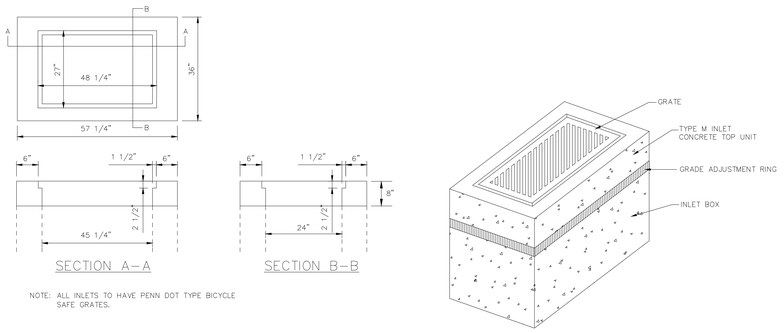
PENNDOT TYPE "M" 2x2' INLET

N.T.S.



STORM SEWER (HDPE) INSTALLATION DETAIL

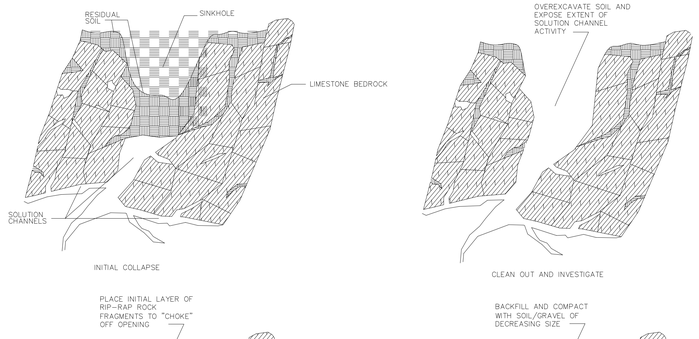
N.T.S.



NOTE: ALL INLETS TO HAVE PENN DOT TYPE BICYCLE SAFE GRATES.

PENNDOT TYPE "M" 2x4' INLET

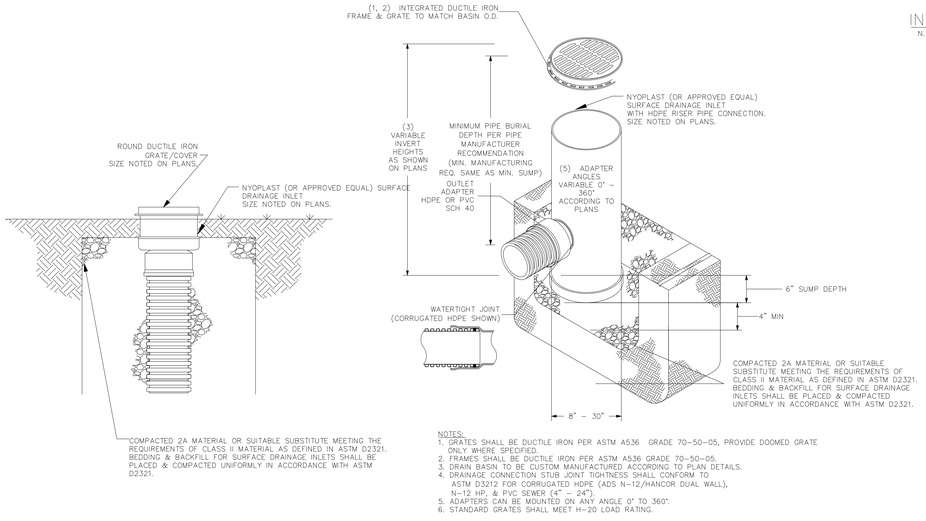
N.T.S.



NOTE:
1. A QUALIFIED GEOTECHNICAL ENGINEER SHOULD BE CONSULTED PRIOR TO THE INITIATION OF THE REPAIR AND MUST BE PRESENT DURING THE REPAIR PROCESS.
2. DRAWING IS TYPICAL AND CANNOT BE APPLIED IN EVERY SCENARIO. NOT TO SCALE.
3. THE LOCAL WATER AUTHORITY MUST BE CONSULTED PRIOR TO SINKHOLE REPAIR.

INFILTRATION SINKHOLE REPAIR DETAIL

N.T.S.



NOTES:
1. GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, PROVIDE DOOMED GRATE ONLY WHERE SPECIFIED.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" – 24").
5. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.
6. STANDARD GRATES SHALL MEET H-20 LOAD RATING.

YARD DRAIN AND GRATE

N.T.S.

STORMWATER FACILITIES CONSTRUCTION NOTES

1. Special protection measures should be taken to identify the bottoms of stormwater basins and rain garden areas to avoid tracking of heavy equipment and soil compaction during the stripping process. Protecting these areas with temporary orange construction fence during earthwork activities is required to avoid compaction of soils and negatively impacting the infiltration capabilities of the stormwater facilities. Where possible, excavators or backhoes should work from the sides to remove the topsoil within these areas.

2. Sediment accumulation shall be removed from all stormwater facilities and BMPs prior to fine grading and placement of amended topsoil mix, gravel, and/or underdrain system. Alternatively, silt sock may be used to protect the BMP areas, and any silt accumulation shall be removed if present prior to fine grading and/or seeding.

3. Compaction of the soil structure in the bottom of any stormwater infiltration areas shall be avoided. For micro-scale and small-scale applications, excavating equipment should have arms with adequate extension so they do not have to work inside the footprint of the infiltration area to avoid compaction. Contractors can utilize a cell construction approach, whereby the proposed infiltration area is split into 500 to 1000 sq. ft. temporary cells with a 10 to 15 foot earth bridge in between, so that cells can be excavated from the side. Excavated material should be placed away from the open excavation so as to not jeopardize the stability of the side walls. The Contractor may request alternate methods of excavation, which shall be approved by the Owner prior to implementation.

4. All field and unpaved area subgrades (excluding stormwater infiltration areas) should be compacted to a maximum of 90% Proctor. If a higher compaction exists, the surface should be scarified to bring the surface to below 90% Proctor. The subgrade should be graded to match the final grade. The contractor may not achieve proposed grades by increasing or decreasing topsoil depths. The Landscape Architect should review the subgrade before beginning placement of topsoil.

5. Topsoil depth should be at least 6 inches (12 inches for amended soil locations as indicated on plan) and compacted to 85% Proctor. If the surface is greater than 85% Proctor, it should be scarified to bring the Proctor values down below 85%. Any bumps or depressions that occur shall be graded and re-tamped until a satisfactory grade is established.

6. Final seeding: Seeding shall be completed as soon as possible after final grade & soil placed to avoid exposure to sun, rainfall, sediment and silt accumulations, all of which can inhibit the infiltration capabilities of the soil. Prior to seeding, the surface must be free of surface water, saturated conditions, and silt and sediment accumulation.

7. The site is located in a State College Borough Water Authority Well Head Sensitive Area, as defined in the Spring Creek Watershed Stormwater Ordinance. Additional care and precaution should be taken to ensure that all temporary and permanent erosion & sediment control and stormwater management facilities are installed correctly to provide adequate protection to the adjacent well field site.

8. Compaction test reports shall be kept on file at the site and be subject to review at all times with copies being forwarded to the Township Engineer.

9. Whenever embankment fill material in excess of three feet is to be used, each layer of compacted fill shall be tested to determine its density per ASTM 2922 or ASTM 3017. The density of each layer shall be 98% of a Standard Proctor Density analysis per ASTM 698. All embankment soils shall have a K factor of 0.32 or less to minimize erosion.

10. When rock is encountered during the excavation of an infiltration area, it shall be removed to an elevation of at least 30 inches below proposed basin floors. All exposed cracks and fissures are to be structurally filled.

11. Temporary and permanent grasses or stabilization measures shall be established on the sides and base of all earthen basins within 15 days of construction.

STORMWATER FACILITIES CONSTRUCTION INSPECTION PROGRAM

Prior to the installation or implementation of the following stormwater management facilities and best management practices (BMPs), the Owner or Township shall be notified and given the opportunity to provide a licensed engineer or soil scientist for inspection of the soil conditions and stormwater management facilities to ensure proper installation during the following critical stages:

1. Creation of the amended topsoil: The amended soil mixture shall be free of clay and native soil clumps larger than 2" in size, and shall be thoroughly mixed to create a homogeneous state of soil, sand, and mulch. Condition of the topsoil materials shall be inspected 1) prior to mixing, and 2) following mixing but prior to infiltration testing. Amended soil must be tested to meet infiltration rate requirement of minimum 10 in/hr, maximum 6 in/hr.

2. Placement of underdrain systems, gravel, and/or amended topsoil mixture: Stormwater facility subsoils shall be inspected to ensure that compaction or accumulation of silt and sediment did not occur within the infiltration facilities. If compaction is apparent in the soil surface due to presence of standing water or visual inspection of the soil material, infiltration testing may be required to determine that the design infiltration rates determined during pre-development soil testing are still achievable within the stormwater facilities or BMP.

3. Final seeding: Prior to seeding to ensure no compaction or silt accumulation has occurred within the stormwater facilities after the amended soil was placed and while awaiting final seeding. If compaction occurred or an impermeable layer has been created due to silt and/or exposure to weather, remediation of the surface may be required, which may include scarification of the subsoil and/or amended soil layer, or removal and replacement of the impermable layer.

4. Installation of outlet structures for Basins 1, 2, 3, and 4, and rain gardens as applicable.

STORMWATER FACILITIES POST-CONSTRUCTION MAINTENANCE PROGRAM

A. The owner shall be responsible for ensuring the proper operation and function of the stormwater facilities located on the property, and the program shall include the following:

1. Following construction, any damaged or incidentally compacted areas shall be restored to their design condition prior to final topsoil and seeding placement.

2. The owner shall complete a visual inspection at least once every six (6) months, and immediately after major storm events (i.e. 2.5 inches or more in a 48-hour period), and one of the inspections shall be after leaves have fallen from trees in autumn. Such a visual inspection shall at least involve an examination for debris deposition (such debris may include, but shall not be limited to aggregate material, leaves, grass clippings, and soil material), settlement, sinkholes, seeps, structural cracking, animal burrows, excessive vegetation, foundation movement, dead plantings, erosion, depressions, and water retention times that exceed seventy-two (72) hours. A visual inspection of the trees and shrubs in the beginning and middle of the growing season to evaluate health of plantings and to complete any necessary pruning. Any perennial plantings shall be cut down and clippings removed at the end of each growing season. During periods of extended drought (i.e. July and August), additional watering of plantings may be required. All inlet pipes, outlet pipes, outlet inlet, storm piping, and drainage structures shall be kept free of any obstructions and foreign material that would cause disruption of water flow in a manner not anticipated for the facility. A written report documenting each inspection shall be retained by the designee, including the date of inspection, list of items inspected, name and organization of the person conducting the inspection, and a list of maintenance correction tasks performed.

3. The owner shall remove any accumulation of debris from stormwater management area(s); maintain groundcover vegetation within any above-ground stormwater management system(s) and on berms to a height that does not exceed six (6) inches; and immediately repair any erosion damage by replacing topsoil on all areas that experience erosion, and seeding, mulching and matting such areas immediately in accordance with the specifications contained in the applicable erosion and sediment pollution control plan and/or approved post construction stormwater management plan. Vehicular access is prohibited within basins; and care should be taken to avoid excessive compaction by mowers. Dislodged rock in any riprap apron should be reset in place. Removal of sediment/debris shall take place when the area has dried, if possible. Rain garden(s) that do not drain within seventy-two (72) hours shall be evaluated by a qualified engineer, geologist, and/or hydrogeologist prior to initiating any repair and/or reconstruction activities.

4. The owner shall remove trash bags and/or litter from such outlets during periods between storm events. Man-made trash removed from any facility shall be disposed of properly in containers collected by a licensed commercial trash hauler.

5. A written report documenting each inspection shall be retained by the designee, including the date of inspection, list of items inspected, name and organization of the person conducting the inspection, and a list of maintenance correction tasks performed.

6. For any structural facility (pipe, inlet, manhole), it must be repaired or replaced in a timely manner if damaged more than superficially, in a way that is a safety hazard, if structurally unsound, or if not substantially performing as it is intended per the original design. The owner shall keep a record of any repaired or replaced facility, including costs, dates, materials removed, materials placed, and the contractor(s) information.

7. The designee shall immediately notify the Township and Centre County Conservation District prior to initiating any "major" repair activities (such repairs that may be required as a result of settlement, sinkholes, seeps, structural cracking, foundation movement, and water retention times that exceed seventy-two hours). All "major" repairs shall be conducted under the direction and supervision of a qualified engineer, geologist, and/or hydrogeologist.

8. All impervious surfaces shall be maintained clean of oil, fuel or other toxic spills, in accordance with state, federal or local regulations.

9. The stormwater management facilities shall be maintained in the following manner:

a. Stormwater Basins and Rain Gardens: Keep free of debris and leaves. Minimize compaction of the bottom of the bed by promoting natural, native vegetation and eliminating the need for riding mowers within the bottom of the bed area by maintaining the growth with non-compacting equipment (trimmers, etc) that will promote vegetated growth within infiltration and detention areas. The only exception will be an annual mowing at the end of the growing season. The basin bottom, banks, outlet structure and downstream outfall shall be inspected for erosion issues and repaired as needed with topsoil, seed, or rip rap as required.

b. Vegetated Swales and Steep Slopes: Keep free of debris and leaves to ensure free movement of runoff. During initial establishment period, inspect erosion control matting and vegetation to ensure all swales and banks became fully stabilized, reseed or repair matting as required. Provide long-term inspection of swales and steep slopes to identify rills or channels that have formed from erosion and channelized runoff, regrade and revegetate if erosion occurs.

c. Storm Inlets and Storm Sewers: Keep free of debris and leaves both within the storm inlet and externally above the grate and stormwater collection area. Inspect storm inlets and storm sewers for missing or broken materials, and replace or repair as required. Inspect inlets for accumulated sediment and properly dispose of waste material.

d. Vegetated Filter Strip: Keep area free of debris. Monitor for adequate grass cover and reseed where needed. Regrade any eroded areas and permanently seed.

B. The Owner is responsible for maintaining the stormwater management in accordance with the approved design. If the Township, Conservation District, or DEP determines at any time that any permanent stormwater facility has been eliminated, altered or improperly maintained, the Owner of the property shall be advised of corrective measures required and given 7 days to initiate appropriate action in accordance with a time schedule dictated by the Township. If such action is not taken by the property Owner, the Township may cause the work to be done and charge all costs to the property owner.

STORMWATER BMP INSPECTION AND MAINTENANCE SUMMARY

BMP	INSPECTION FREQUENCY	INSPECTION ACTIVITY	ROUTINE MAINTENANCE & REPAIRS
STORMWATER BASIN & RAIN GARDENS	EVERY 6 MONTHS OR AFTER LARGE STORM EVENT (>2.5" in 48 HR)	· Inspect for trash or large debris · Observe outlet structure, and pipe outfall for clogs or damage. · Observe rip rap areas for erosion or displaced rock · Observe banks for erosion or sags · Observe basin/rain garden bottoms for standing water	· Keep free of debris. · Mow annually, otherwise maintain by hand trimming. · Repair & seed eroded areas · Scarify surface or otherwise remove any layers on the basin/rain garden bottom that inhibits drainage · Repair or replace broken grates, outlet structures, or end sections · Install additional rip rap as necessary
VEGETATED SWALES & STEEP SLOPES	ANNUALLY	· Inspect for trash or large debris · Observe rip rap areas for erosion or displaced rock · Observe banks for erosion, rills or channels · Ensure swales are following intended flow path · Observe end sections and culverts	· Keep free of debris to maintain flow path. · Mowing can occur regularly, or minimally in "no mow" seeded areas. · Repair & seed eroded areas · Install additional rip rap as necessary · Repair or replace broken culverts or end sections
STORM INLETS & STORM SEWERS	ANNUALLY	· Inspect for trash or large debris above the grate or within the structure/pipe · Oberve for cracks or deficiencies in the grates or concrete structure	· Keep free of debris and grass clippings. · Repair or replace broken pipes or inlets as required.
VEGETATED FILTER STRIP	ANNUALLY	· Inspect for erosion and areas of channelized flow · Inspect for minimal grass cover	· Repair and seed eroded areas · Regrade if needed to maintain flat sheet flow conditions

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SSE PROJECT No: 16-248
DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

C108.7

GENERAL EROSION AND SEDIMENTATION CONTROL METHODS/PROCEDURES

In all cases the smallest practical area of land surfaces shall be disturbed.

Erosion and sedimentation controls must be constructed, stabilized, and functional before site disturbance within the tributary areas of those controls.

All sediment shall be prevented from entering any existing storm drain or ditch through use of filter fabric fence, sediment traps, straw blankets, and rock filters.

All construction traffic shall enter and exit the site via the proposed rock construction entrance.

EROSION & SEDIMENT CONTROL CONSTRUCTION NOTES

1. Special protection measures should be taken to identify infiltration bed, basin, and swale areas to avoid tracking of heavy equipment and soil compaction during the stripping process. Flagging and protecting these areas during earthwork activities is highly recommended to avoid compaction of soils and negatively impacting the infiltration capabilities of the stormwater facilities. Where possible, excavators or backhoes should work from the sides to remove the topsoil within these areas.

2. Sediment accumulation shall be removed from all stormwater facilities and BMPs prior to fine grading and placement of amended topsoil mix, gravel, and/or underdrain system. Alternatively, silt sock may be used to protect the BMP areas, and any silt accumulation shall be removed if present prior to fine grading and/or seeding.

3. Compaction of the soil structure in the bottom of any stormwater infiltration beds, basins, or swales shall be avoided. For micro-scale and small-scale applications, excavating equipment should have arms with adequate extension so they do not have to work inside the footprint of the infiltration area to avoid compaction. Contractors can utilize a cell construction approach, whereby the proposed infiltration area is split into 500 to 1000 sq. ft. temporary cells with a 10 to 15 foot earth bridge in between, so that cells can be excavated from the side. Excavated material should be placed away from the open excavation so as to not jeopardize the stability of the side walls. The Contractor may request alternate methods of excavation, which shall be approved by the Owner prior to implementation.

4. All field and unpaved area subgrades (excluding stormwater infiltration areas) should be compacted to a maximum of 90% Proctor. If a higher compaction exists, the surface should be scarified to bring the surface to below 90% Proctor. The subgrade should be graded to match the final grade. The contractor may not achieve proposed grades by increasing or decreasing topsoil depths. The Landscape Architect should review the subgrade before beginning placement of topsoil.

Topsoil depth should be at least 6 inches and compacted to 85% Proctor. If the surface is greater than 85% Proctor, it should be scarified to bring the Proctor values down below 85%. Any bumps or depressions that occur shall be graded and re-tamped until a satisfactory grade is established.

5. Seeding shall be applied to all disturbed areas as soon as practical following completion of fine grading. Disturbed areas that will not be topsoiled and fine graded within 2 weeks of being excavated shall be temporarily seeded and mulched. Prior to seeding, the surface must be free of surface water, saturated conditions, and silt and sediment accumulation.

MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL FACILITIES

All erosion and sedimentation control facilities must be maintained in operating condition including replacement of plugged sediment sock, until upstream areas are stabilized with a minimum of 70% perennial uniform vegetated ground cover.

Erosion and sedimentation control devices shall be inspected after each runoff event and on a weekly basis.

Sediment at sediment sock must be removed when accumulations reach ½ the above ground height of the sock.

Sediment removed from sediment sock shall be placed in a designated topsoil stockpile area.

SEEDING

Seeding shall be applied to all disturbed areas as soon as practical following completion of fine grading. Disturbed areas that will not be topsoiled and fine graded within 2 weeks of being excavated shall be temporarily seeded and mulched.

Temporary seed mixture shall be as follows:

Formula and Species	% By Mass	Minimum % Purity	Germination	Weed Seed	Seeding Rate lb/1000 s.y.
Formula E----------					20.0 Total
Annual Ryegrass (Lolium multiflorum)	100	98	90	0.15	20.0

Permanent seed mixtures shall be as follows:

Turf Grass Seed Mix Specifications

Mix Composition

30.0%	*Festuca arundinacea,*	*'Fawn'* (Tall Fescue, 'Fawn')
30.0%	*Lolium perenne,*	*'Shining Star'* (Perennial Ryegrass, 'Shining Star' (turf type))
15.0%	*Poa pratensis,*	*'Volt'* (Kentucky Bluegrass, 'Volt')
15.0%	*Poa pratensis,*	*'Shamrock'* (Kentucky Bluegrass, 'Shamrock')
10.0%	*Lolium multiflorum*	(Annual Ryegrass)

General Product Information: This mix is good for high-traffic areas.

Item Number: Ernst Seed, ERNMX-106, or approved equal
Product Categories: Lawn & Turfgrass Sites
Height: 1.0 – 4.0 Ft
Seeding Rate: 75-150 lb per acre, or 3-5 lb per 1,000 sq ft

Partially Shaded Seed Mix Specifications

Mix Composition

39.8%	*Schizachyrium scoparium,*	*'Camper'* (Little Bluestem, 'Camper')
19.0%	*Elymus virginicus,*	*PA Ecotype* (Virginia Wildrye, PA Ecotype)
17.7%	*Panicum sphaeroncarpon*	(Round Seed Panicgrass)
4.0%	*Chamaecrista fasciculata*	*PA Ecotype* (Partridge Pea, PA Ecotype)
3.5%	*Echinacea purpurea*	(Purple Coneflower)
3.0%	*Rudbeckia hirta,*	(Blackeyed Susan, Coastal Plain NC Ecotype)
2.0%	*Heliopsis helianthoide,*	(Oxeye Sunflower, PA Ecotype)
2.0%	*Penstemon digitalis*	(Tall White Beardtongue, PA Ecotype)
1.0%	*Elymus hystrix*	(Bottlebrush Grass, PA Ecotype)
1.0%	*Liatris spicata*	(Marsh Blazing Star, PA Ecotype)
0.5%	*Agrostis perennans*	(Autumn Bentgrass, Albany Pine Bush-NY Ecotype)
0.5%	*Asclepias tuberosa*	(Butterfly Milkweed)
0.5%	*Aster macrophyllus*	(Bigleaf Aster, PA Ecotype)
0.5%	*Aster prenanthoides*	(Zigzag Aster, PA Ecotype)
0.5%	*Baptisia australis*	(Blue False Indigo, Southern WV Ecotype)
0.5%	*Geum canadense*	(White Avens, PA Ecotype)
0.5%	*Pycnanthemum tenuifolium*	(Narrowleaf Mountainmint)
0.5%	*Solidago bicolor*	(White Goldenrod, PA Ecotype)
0.5%	*Tradescantia ohiensis*	(Ohio Spiderwort, PA Ecotype)
0.5%	*Zizia aurea*	(Golden Alexanders, PA Ecotype)
0.4%	*Anemone virginiana*	(Thimbleweed, PA Ecotype)
0.4%	*Aster laevis*	(Smooth Blue Aster, NY Ecotype)
0.4%	*Monarda fistulosa*	(Wild Bergamot, Fort Indiantown Gap-PA Ecotype)
0.2%	*Solidago juncea*	(Early Goldenrod, PA Ecotype)
0.1%	*Baptisia tinctoria*	(Yellow False Indigo, PA Ecotype)
0.1%	*Penstemon hirsutus*	(Hairy Beardtongue)
0.1%	*Veronicastrum virginicum*	(Culver's Root, PA Ecotype)

General Product Information: The native grasses and forbs are ideal for roadside areas and woodland margins.

Item Number: Ernst Seed mix, ERNMX-140, or approved equal
Product Categories: Pollinator Favorites, Woodland Openings
Height: 0.3 – 5.0 Ft
Seeding Rate: 20 lb per acre, or 1/2 lb per 1,000 sq ft

No Mow Seed Mix Specifications

Mix Composition

80.0%	*Festuca ovina*	Hard Fescue
20.0%	*Festuca rubra 'commutata'*	*Chewings Fescure*

General Product Information: Low Maintenance Law Areas
Item Number: Lesco No Mow Fine Fescure Seed Mix, or approved equal
Product Categories: Lawn & Turfgrass Sites

Seeding Rate: 2-3 lb per 1,000 sq ft
Price: $

No Mow Fine Fescue Mix

Mix Composition

24.50%	Festuca commutata	Silhouette Chewings Fescue
24.50%	Festuca ovina	Quatro Sheep Fescue
12.38%	Hard Fescue	Festuca brevipila (F. longifolia)
12.39%	Festuca rubra	Shoreline Slender Creeping Red Fescue
11.76%	Festuca brevipila (F. longifolia)	Eureka 2 Hard Fescue –
11.76%	Festuca rubra	Maxima 1 Creeping Red Fescue-

Item Number: Prairie Nursery #50091 No Mow Formula
Lot Number:
Seeding Rate: 2.5 lbs / 1000 SF, or 110 pounds per acre

Steep Slope Seed Mix Specifications

No Mow Fine Fescue mix with Annual Rye and Clover cover crop added for short-term stability

Mix Composition

24.0 %	Festuca ovina	Blue Mesa Sheep Fescue
22.0 %	Festuca commutata	Shadow II Chewings Fescue
12.0 %	Festuca brevipila (F. longifolia)	Gladiator Hard Fescue
12.0 %	Festuca rubra	Sea Fire Slender Creeping Red Fescue
12.0 %	F. rubra, subsp. rubra	Kent Creeping Red Fescue
12.0 %	Festuca brevipila (F. longifolia)	Sword Hard Fescue
3.0 %	Lolium multiflorum	Annual Ryegrass
3.0 %	Trifolium repens	White Clover

Item Number: Prairie Nursery #50092 No Mow Formula
Lot Number: PNA17
Seeding Rate: 5 lb / 1000 SF, or 220 pounds per acre

Pollinator Seed Mix Specifications

Mesic to Dry Native Pollinator Mix w/o Grasses

Mix Composition

12.0%	*Coreopsis lanceolata*	Lanceleaf Coreopsis
12.0%	*Echinacea purpurea*	Purple Coneflower
12.0%	*Penstemon digitalis*	Tall White Beardtongue, PA Ecotype
12.0%	*Rudbeckia hirta,*	Blackeyed Susan, Coastal Plain NC Ecotype
9.5%	*Chamaecrista fasciculata*	Partridge Pea, PA Ecotype
6.0%	*Heliopsis helianthoides*	Oxeye Sunflower, PA Ecotype
6.0%	*Verbena hastata*	Blue Vervain, PA Ecotype
5.0%	*Aster laevis*	Smooth Blue Aster, NY Ecotype
5.0%	*Liatris spicata*	Marsh Blazing Star
3.0%	*Asclepias incarnata*	Swamp Milkweed, PA Ecotype
3.0%	*Aster novae-angliae*	New England Aster, PA Ecotype
2.0%	*Senna hebecarpa*	Wild Senna, VA & WV Ecotype
2.0%	*Tradescantia ohiensis*	Ohio Spiderwort, PA Ecotype
2.0%	*Zizia aurea*	Golden Alexanders, PA Ecotype
1.5%	*Monarda fistulosa*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype
1.5%	*Geum canadense*	White Avens, PA Ecotype
1.5%	*Pycnanthemum tenuifolium*	Narrowleaf Mountainmint
1.0%	*Baptisia australis*	Blue False Indigo, Southern WV Ecotype
1.0%	*Lespedeza capitata*	Roundhead Lespedeza, RI Ecotype
0.5%	*Solidago juncea*	Early Goldenrod, PA Ecotype
0.3%	*Eupatorium perfoliatum*	Boneset, PA Ecotype
0.2%	*Solidago rugosa*	Wrinkleleaf Goldenrod, PA Ecotype
0.2%	*Solidago speciosa*	Showy Goldenrod, Southern WV Ecotype
0.1%	*Eupatorium fistulosum*	Joe Pye Weed, PA Ecotype
0.1%	*Eupatorium rugosum*	White Snakeroot, PA Ecotype

*Plant with Oats or Annual Rye Cover Crop

General Product Information: Contains native forbs common in the Northeast. Excellent for wildlife food and shelter, including pollinators.

Item Number: Ernst Seed ERNMX-125
Product Categories: Pollinator Favorites, Uplands & Meadows
Height: 1.0 – 5.0 Ft
Seeding Rate: 5-10 lb per acre with 30 lb per acre of a cover crop

Pollinator Mix Option –
Grass and Wildflower Meadow

Mix Composition

73.2%	*Festuca ovina, Variety Not Stated*	(Sheep Fescue, Variety Not Stated)
17.0%	*Lolium multiflorum*	(Annual Ryegrass)
3.0%	*Chrysanthemum maximum*	(Shasta Daisy)
2.0%	*Coreopsis lanceolata*	(Lanceleaf Coreopsis)
2.0%	*Rudbeckia hirta,*	*Coastal Plain NC Ecotype* (Blackeyed Susan, Coastal Plain NC Ecotype)
0.5%	*Achillea millefolium*	(Common Yarrow)
0.5%	*Asclepias tuberosa*	(Butterfly Milkweed)
0.3%	*Chamaista fasciculata, PA Ecotype*	(Partridge Pea, PA Ecotype)
0.3%	*Eupatorium coelestinum, VA Ecotype*	(Mistflower, VA Ecotype)
0.3%	*Rudbeckia fulgida var. fulgida, Northern VA Ecotype*	(Orange Coneflower, Northern VA Ecotype)
0.2%	*Penstemon hirsutus*	(Hairy Beardtongue)
0.2%	*Pycnanthemum tenuifolium*	(Narrowleaf Mountainmint)
0.1%	*Aster oblongifolius, PA Ecotype*	(Aromatic Aster, PA Ecotype)
0.1%	*Aster prenanthoides, PA Ecotype*	(Zigzag Aster, PA Ecotype)
0.1%	*Baptisia tinctoria, PA Ecotype*	(Yellow False Indigo, PA Ecotype)
0.1%	*Tradescantia virginiana, Southeastern PA/Northern VA blend*	(Virginia Spiderwort, Southeastern PA/Northern VA blend)

General Product Information: Specifically designed to provide erosion and sediment control and color on low-fertility sites. May be mowed occasionally. Low Growing Wildflower & Grass Mix

Item Number: Ernst Seed, ERNMX-156, or approved equal
Product Categories: Uplands & Meadows
Height: 0.5 – 5.0 Ft
Seeding Rate: 20-40 lb per acre

Pollinator Mix Option –
Grass Clover Pasture Mix

Mix Composition

40.0%	*Trifolium pratense, Medium, Variety Not Stated*	(Red Clover, Medium, Variety Not Stated)
30.0%	*Festuca arundinacea, 'Bronson'*	('Tall Fescue, 'Bronson' (pasture type))
20.0%	*Medicago sativa, VNS*	(Alfalfa, VNS)
10.0%	*Phleum pratense, 'Climax'*	('Timothy, 'Climax')

Item Number: ERNMX-108
Product Categories: Forage & Pasture Sites
Height: 1.3 – 4.0 Ft
Seeding Rate: 20-25 lb per acre

Wet Basin Seed Mix Specifications

Mix Composition

20.0%	*Puccinellia distans, 'Fults'*	Alkaligrass, 'Fults'
19.0%	*Panicum clandestinum, 'Tioga'*	Deertongue, 'Tioga'
18.0%	*Agrostis stolonifera*	Creeping Bentgrass
18.0%	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype
15.0%	*Poa palustris*	Fowl Bluegrass
5.0%	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype
3.0%	*Juncus effusus*	Soft Rush
2.0%	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype

General Product Information: The hardy inexpensive grass and grass-like species are ideal for retention basins that may have high salt inflows and where mowing may be required.

Item Number: Ernst Seed ERNMX-126
Product Categories: Stormwater Management
Height: 0.3 – 5.0 Ft
Seeding Rate: 20-40 lb per acre, or 0.5 – 1.0 lb per 1,000 sq ft

FILL MATERIAL:
The contractor shall balance all cuts and fill with the amount of rock and soil that is available on site.

In the case that fill material is required for the site, the contractor is responsible to perform environmental due diligence and determine that all fill imported to the site meets DEP's definition of clean fill.

Clean fill is defined as uncontaminated, nonwater-loluble, nondecomposable inert solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and deomolition activities that is separate from other waste and recognizable as such. (25 Pa. Code 271.101 and 287.101) The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized.

Environmental due diligence is defined as investigative techniques, inluding, but not limited to, visual property inspections, electronic data base searches, review of ownership and use of history of property, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits.

SEQUENCE OF CONSTRUCTION FOR EROSION AND SEDIMENTATION CONTROL

1. Submit a detailed construction schedule to the Owner for evaluation and approval. The sequence below provides a general guidance installation of site features to minimize off-site erosion and sediment transport, however it is the Contractor's responsibility to review and determine the final process for installation and project completion, as it is recognized that external factors, including weather, material availability, and subcontractor coordination may impact the desired sequence of construction.
2. Install the rock construction entrance and compost filter sock in accordance with the contract drawings. Any adjustment to the location or layout of the entrance must be coordinated and approved by the County Conservation District. Store topsoil stockpiles in designated area on site. Other areas used for topsoil storage shall be protected with compost filter sock on the downstream side of the stockpile.
3. Construct and stabilize southern swales at the bottom of the site, as well as the diversion compost filter sock on the southern end of the site that will direct runoff to the rock filter and eventually through the lower compost filter sock before leaving the site.
4. Place temporary orange construction fence around the bottom of each stormwater management area to preserve stormwater infiltration capabilities of the soil.
5. Establish areas to be graded, preserving as much natural vegetation as practical. Cut and clear necessary vegetation to install compost filter sock where indicated throughout the site.
6. Strip topsoil in only areas necessary for project completion and store in designated topsoil stockpile location. Do not strip entire site, specifically the southern area below the developed that is designated to be transition from agricultural/farming cover to No-Mow Fescue (see Landscaping Plan). This area is proposed to be transitioned through the process of undercutting and tilling, and the existing topsoil will remain in place.
7. Rough grade and excavate for the proposed stormwater management areas, to include the installation of underdrain systems as applicable. Avoid compaction of soil in the bottom of any stormwater infiltration beds, basins, or swales. Where possible, excavators or backhoes should work from the sides to excavate the reservoir layer to its appropriate design depth and dimensions. For micro-scale and small-scale applications, excavating equipment should have arms with adequate extension so they do not have to work inside the footprint of the infiltration area (to avoid compaction). Contractors can utilize a cell construction approach, whereby the proposed infiltration area is split into 500 to 1000 sq. ft. temporary cells with a 10 to 15 foot earth bridge in between, so that cells can be excavated from the side. Excavated material should be placed away from the open excavation so as to not jeopardize the stability of the side walls.
8. In all cases, within 7 days after earth disturbance activities cease in any area of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade may be stabilized in accordance with the temporary stabilization specifications.
9. Install gravel, amended soils, outlet pipes, culverts and rip rap apron within the stormwater management basins and rain gardens as shown on the construction plans. Where possible, excavators or backhoes should work from the sides to place materials within the bottoms of the beds and basins.
10. Rough grade remainder of the site, including excavation for the vegetated swales. Place swale lining within the trenches as soon as possible following backfill of trenches to provide protection of sediment within the swale. If a rain event that causes erosive damage or sediment transport to the trenches occurs before site stabilization, the sediment shall be removed before final seeding is completed.
11. Final grade new playing fields and excavate for vegetated swales in parking lot area.
12. Complete fine grading by placing topsoil in the location and depths specified on the construction plans and specifications.
13. Seed basin area and all other parkland grass/meadow areas upon completion of fine grading. Seeding should meet all specifications detailed in the erosion & sediment control narrative and construction documents.
14. Begin construction of new buildings and install proposed utility connections, main lines, laterals and site lighting.
15. Install concrete sidewalk, aggregate paths, and parking lot driving surface once site stabilization is complete. Do not construct aggregate paths until the upstream tributary areas are vegetated and stormwater management controls, swales, etc are installed.
16. Fertilize, mulch and seed all disturbed areas as specified.
17. Remove any accumulated sediment from the bottom of the sediment basin. Excavate additional material from bottom of basin as necessary for placement of amended topsoil. Scarify bottom of basin prior to topsoil placement. Place topsoil using low impact equipment to avoid compacting basin bottom. Install permanent seeding and soil supplements in basin bottom.
18. Upon 70% vegetative cover of erosion resistant perennial species, remove all erosion and sedimentation control devices.
19. Request final site inspection by the Township and Centre County Conservation District.

EROSION AND SEDIMENT CONTROL PLAN STANDARD NOTES:

1. Topsoil stockpile heights shall not exceed 45 feet. Stockpile sides must be 3:1 or flatter.
2. A copy of the approved erosion and sediment control plan must be available at the project site at all times. The operator shall assure that the approved erosion and sediment control plan is properly and completely implemented.
3. Before initiating any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the Centre County Conservation District.
4. At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative of the Centre County Conservation District to an on-site pre construction meeting.
5. At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call System Incorporated at 1-800-242-1776 for the location of existing underground utilities.
6. All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing, and topsoil stripping shall be limited only to those areas described in each stage.
7. Immediately upon discovering unforseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.
8. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
9. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Centre County Conservation District for an inspection prior to removal of the BMP's.
10. Upon completion of all earth disturbance activities, removal of all temporary BMP's and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Centre County Conservation District for a final inspection.
11. All channels must be kept free of obstructions such as fill, fallen leaves, & woody debris, accumulated sediment, and construction materials/wastes. Channels should be kept mowed and/or free of all weedy, brushy, or woody growth. Any underground utilities running across/through the channel(s) shall be covered immediately and the channel(s) repaired and stabilized per the channel cross –section detail.
12. Vegetated channels shall be constructed free of rocks, tree roots, stumps, or other projections that will impede normal channel flow and/or prevent good lining to soil contact. The channel shall be initially over excavated to allow for the placement of topsoil.
13. Sediment basins/traps shall be kept free of all trash, concrete wash water and other debris that pose the potential for clogging the basin/trap outlet structures and/or pose the potential for pollution to waters of the Commonwealth.
14. When sediment has accumulated to the clean out elevation on any stake, all accumulated sediment shall be removed from the entire trap/basin bottom.
15. Sediment basins must be protected from unauthorized acts of third parties.
16. Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 12" layered lifts at 98% density.
17. Permanent stabilization is defined as a minimum uniform 70% perennial vegetative cover or other permanent cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
18. Immediately after earth disturbance activities cease,the operator shall stabilize the disturbed areas. During stabilization periods, mulch must be applied at the specific rates. Disturbed areas which are not at finished grade and which will be within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at final grade or which will not be within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
19. An erosion control blanket will be installed on all disturbed slopes steeper than 3:1, all areas of concentrated flows, and disturbed areas within 50' of Waters of the Commonwealth.
20. Until the site is stabilized, all erosion and sediment control BMP's must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMP's after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including, repair, replacement, re- grading, reseeding, re-mulching and re-netting must be performed immediately. If erosion and sediment control BMP's fail to perform as expected, replacement BMP's or modifications of those installed will be required.
21. Sediment must be removed from storm water inlet protection after each runoff event.
22. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains, or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
23. The permittee and co-permittee must ensure that visual site inspectors are conducted weekly, and after each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the Erosion and Sediment Control (E&S) BMP's are operational and effective in preventing pollution to the waters of the Commonwealth. A written report of each inspection shall be kept, and include:
    a) a summary of the site conditions, E&S BMP's, and compliances; and
    b) the date, time, and the name of the person conducting the inspection.
24. All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1., and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
25. The contractor will be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.

BLASTING NOTES:

IF DRILLING OR BLASTING IS REQUIRED DURING CONSTRUCTION, ALL ACTIVITIES MUST BE PLANNED WITH BOTH FERGUSON TOWNSHIP AND THE STATE COLLEGE BOROUGH WATER AUTHORITY.

IN THE CASE THAT DRILLING OR BLASTING ACTIVITIES WILL OCCUR THE FOLLOWING GUIDELINES MUST BE FOLLOWED:
1. BLASTING ACTIVITIES MUST BE MONITORED BY EITHER A PENNSYLVANIA LICENSED PROFESSIONAL GEOLOGIST OR ENGINEER.
2. THE AFOREMENTIONED LICENSED PROFESSIONAL MUST SUBMIT A REPORT WITH SPECIFIC BLASTING RECOMMENDATIONS WITH REGARDS TO AMOUNT OF CHARGE, FIRING TIMES, GROUND VELOCITY, ACCELERATION AND DISPLACMENT AS WELL AS ANY POTENTIAL EFFECTS TO THE GROUND WATER AQUIFER SYSTEM.
3. BLASTING SHALL BE MONITORED BY THE LICENSED GEOLOGIST OR ENGINEER WITH SEISMOGRAPHIC EQUIPMENT AND ACCURATE RECORDS SHALL BE TAKEN FOR EACH BLAST.
4. BLASTING RECORDS MUST CONTAIN GENERAL LOCATION, DEPTH AND QUANTITY OF HOLES DRILLED AS WELL AS TYPE AND QUANTITY OF EXPLOSIVE USED, GROUND DATA, ETCETERA.
5. ALL BLASTING OPERATIONS SHALL BE CONDUCTED BY EXPERIENCED PERSONNEL WITH A VALID PENNSYLVANIA BLASTER'S LICENSE. IN THE EVENT THAT EXCESSIVE SUBSURFACE FRACTURING OCCURS, REMEDIATION MEASURES MUST BE APPROVED BY SCBWA.
6. THE DEVELOPER WILL REIMBURSE ASSOCIATED COSTS & EXPENSES FOR ALL CONSTRUCTION PHASES TO SCBWA & FERGUSON TOWNSHIP.
7. THE ABOVE STANDARDS MAY BE MODIFIED AS DEEMED NECESSARY BY SCBWA UPON AGREEMENT BETWEEN DEVELOPER, FERGUSON TOWNSHIP, SCBWA.

PROCEDURES FOR SINKHOLE REMEDIATION

DURING DAILY SITE INSPECTIONS IF ANY SUBSIDENCE OR OPEN VOIDS ARE DISCOVERED IMMEDIATELY CALL THE EMERGENCY CONTACTS BELOW:

- STATE COLLEGE BOROUGH WATER AUTHORITY (814)-238-6766, FERGUSON TOWNSHIP ENGINEER (814)-238-4651, THE CONSTRUCTION PROJECT MANAGER, PROJECT GEOTECHNICAL ENGINEER, AND STAHL SHEAFFER ENGINEERING (814)-689-1562

IN THE CASE THAT NO CONTACT CAN BE MADE, CONTINUE THE FOLLOWING PROCEDURES:

- IMMEDIATELY ROPE OFF THE AREA.
- DIVERT ANY RUNOFF THAT IS ENTERING THE CAVITY.
- STOP ALL EXCAVATION UPSLOPE OF THE AREA UNTIL FURTHER DIRECTION FROM GEOTECHNICAL ENGINEER IS RECEIVED.
- IN THE CASE THAT A SINKHOLE DOES DEVELOP, A TEMPORARY FIX MUST BE PROVIDED BY THE CONTRACTOR WITHIN 24 HOURS. WITHIN 5 DAYS A PERMANENT SOLUTION MUST BE CREATED WITH THE GEOTECHNICAL ENGINEER AND APPROVED BY STATE COLLEGE BOROUGH WATER AUTHORITY BEFORE COMPLETING ANY WORK. UNLESS OTHERWISE AGREED UPON, WORK MUST START WITHIN 10 CALENDAR DAYS.
- STATE COLLEGE BOROUGH AND FERGUSON TOWNSHIP RESERVE THE RIGHT TO ENTER THE PROPERTY TO COMPLETE REPAIRS IF THE AFOREMENTIONED TIME FRAME IS NOT MET.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

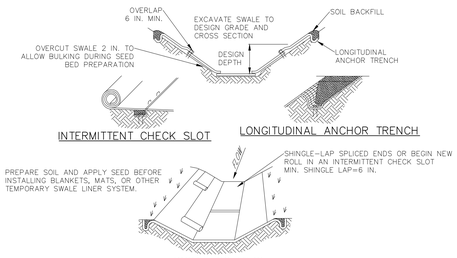
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
EROSION AND SEDIMENTATION CONTROL DETAILS

C108.8



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

SWALE NO.	DEPTH D (FT)	TOP WIDTH W (FT)	LINING *
1	1.0	8.0	NAG S75; PERM. SEED
2	1.0	11.0	NAG SC150; PERM. SEED
3	0.75	6.0	NAG S75; PERM. SEED
4	1.0	9.5	NONE
5	1.0	7.8	NAG SC150; PERM. SEED
6	1.0	7.8	NAG S75; PERM. SEED
7	1.0	12.50	NAG SC150; PERM. SEED
8&9	0.50	7.50	NAG S75; PERM. SEED
10&12	1.0	12.50	NAG S75; PERM. SEED
11	0.50	17.0	NONE

NOTES:
1. SWALES SHALL BE LINED WITH S75BN NORTH AMERICAN GREEN EROSION CONTROL LINING.

2. ALL SWALES DESIGNATED ON THE EROSION AND SEDIMENT CONTROL PLANS SHALL BE LINED.

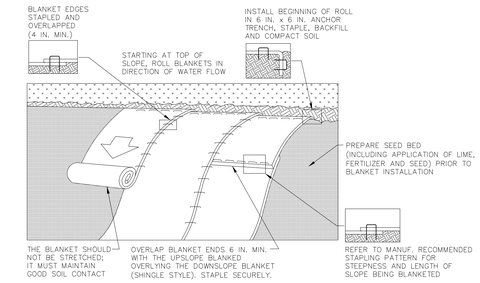
3. ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

4. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.

5. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

6. NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

VEGETATED SWALE INSTALLATION
N.T.S.



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

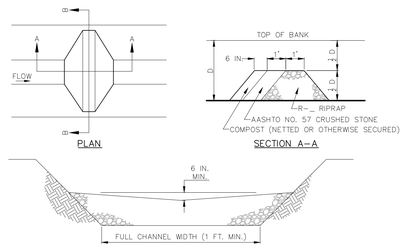
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL BLANKET INSTALLATION
N.T.S.

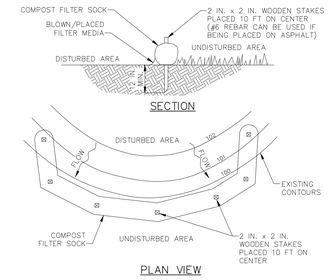


NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

ROCK SEDIMENT FILTER
N.T.S.



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

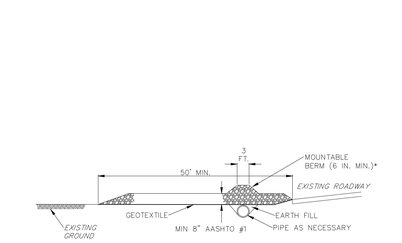
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

TYPICAL COMPOST FILTER SOCK
N.T.S.



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

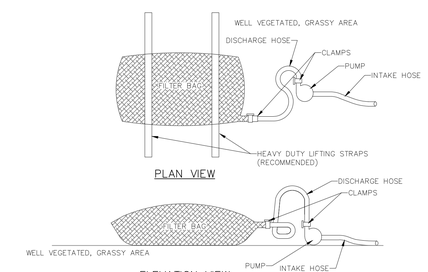
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE
N.T.S.



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

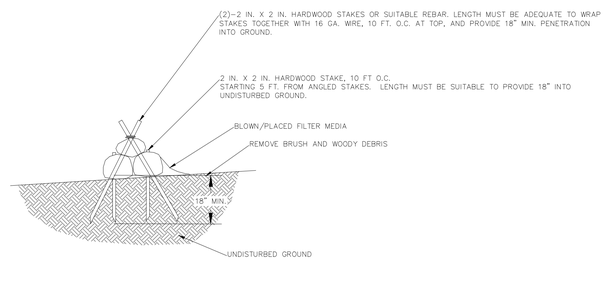
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAG
N.T.S.



STACKED FILTER SOCK
N.T.S.

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
EROSION AND SEDIMENTATION CONTROL DETAILS

C108.9

SCBWA Land - 1,090 LF - 'D' Buffer

Toll Brothers Property - 645 LF - C Buffer

30' Landscape Buffer

30' Landscape Buffer

30' Landscape Buffer

Memorial Garden Plantings

Annual and Perennial Plantings

30' Landscape Buffer

30' WIDTH (MIN.) UAJA PUMP STATION ACCESS & SEWER EASEMENT AREA

Musser Gap to Valleylands (MS2V) Greenway Corridor

Pollinator Plantings 2,625 SF

Pollinator Plantings 2,460 SF

Pollinator Plantings 3,120 SF

Pollinator Plantings 2,850 SF

Pollinator Plantings 1,500 SF

Pollinator Plantings 2,250 SF

Pollinator Plantings 1,725 SF

Pollinator Plantings 3,035 SF

Potential Additional Landscaping in Coordination with the Architect

Sensory Garden

Playground

PLAY GROUND WITH SYNTHETIC TURF WITHIN FENCELINE (SEE PLAYGROUND PLAN SET)

ALL SEASON PAVILION 3710 S.F. ONE-STORY F.F.E. 1214.00

PARK STORAGE BUILDING 1680 S.F. ONE-STORY F.F.E. 1188.00

SCREENED DUMPSTER AND RECYCLING CONCRETE PAD

MATERIAL STORAGE CONCRETE PAD

UAJA PUMP STATION

PUMP STATION VAULT

GRASS PRACTICE FIELD

WH4 FIELD 180'x330' (GRASS)

WH3 FIELD 180'x330' (GRASS)

WH2 FIELD 240'x330' (GRASS) (ALT. SYNTHETIC TURF)

WH1 FIELD 240'x330' (GRASS) (ALT. SYNTHETIC TURF)

PROTECTED WOODED AREA 3.46 ACRES

FUTURE PHASES

PHASE 1 BOUNDARY

MAGNETIC

MAX. 3% FROM BUILDING

3 - QC, 5 - CF, 17 - LB, 16 - CS, 5 - OV, 3 - CF, 16 - SC, 6 - GD, 16 - VD, 6 - OV, 6 - MG, 3 - CF

5 - CC, 3 - PSK, 5 - MS, 16 - EF, 2 - PSK, 6 - AL, 6 - CC, 3 - MG, 3 - PSK, 6 - MS, 17 - ST, 16 - IG

3 - PSK, 5 - AL, 4 - QP, 17 - VB, 2 - CC, 3 - QP, 4 - AL, 3 - QC, 3 - OV

3 - CC, 3 - CF, Multi-Family Townhomes, 3 - CF, 3 - AL, 6 - IG, 2 - QS, 5 - VD, 4 - CS, 3 - OV, 2 - SC, 5 - ST, 3 - IG, 2 - QM, 3 - AL, 3 - OV, 2 - QC, 5 - CC, 2 - CF, 2 - OV, 3 - CF, 8VD, 3LB, 4IG, 4IG, 7SC, 4IG, 1 - AS, 2 - NS, 3 - PSK, 8 - OA, 8 - QC, 8 - QP, 6 - NS, 6 - AS, 3 - AL, 2 - CF, 2 - AL, 8 - CaC, 6 - QM, 2 - OV, 3 - PSK, 8 - LS, 3 - OV, 5 - MS, 8 - LT, 3 - CF, 4 - GD, 7 - GD, 6 - MS, 6 - CF, 7 - AG

9 - PS

5 - NS

4 - VD, 7 - VD

6 - PxA, 5 - PxA, 2 - PxA, 4 - PxA, 4 - AR, 2 - AR, 5 - AR, 6 - AR

34 Parking Lot Trees
17 Sunset Red Maples
17 Bloodgood Planetree

6 - AR, 3 - AR, 5 - PxA, 1 - PxA, 2 - PxA, 4 - AR, 5 - PxA

26 Parking Lot Trees
13 Sunset Red Maples
13 Bloodgood Planetree

PSU Land - 1,320 LF - 'A' Buffer
Diverse recreation program with trails, passive recreation, and Source Water Protection demonstration projects

PSU Land - 1,825 LF - 'A' Buffer
Diverse recreation program with trails, passive recreation, and Source Water Protection demonstration projects

9 - QC, 6 - AL, 7 - LS, 6 - GD, 3 - QP, 4 - PP, 8 - QP, 6 - MG, 9 - MG, 2 - QP, 4 - PP, 5 - QP, 2 - MG, 5 - QP, 3 - MG, 3 - QC, 6 - PSK, 8 - LS, 3 - QC, 5 - GD, 6 - OV, 2 - QC, 6 - MS, 6 - CC

NOTE:
The Landscape Planting Plan depicted here represents the landscape architect's best attempt to meet the municipal landscape buffer planting requirements. Because the 30' landscape buffer also contains an internal park trail and a regional greenway trail, it was difficult to design a landscape buffer and an appropriately landscaped trail corridor. A variance was requested and denied by the township to allow for flexibility in the buffer design to achieve an appropriate buffer-with-trail solution. The current plan ignores the safety and security concerns we have for future trail users by creating dense plantings with limited visual access to the trail. The plantings will also be providing buffers where none are needed, between compatible land uses focused on recreation and conservation. A much less dense planting would be preferred to allow for better performance of the plant material, enhanced trail-user experience, and improved public safety.

NOTES:
THE PLAN LEGENDS EXISTING AND PROPOSED IS ON SHEET C101.

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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814-234-7366

BSA / LA
182 FAIRMOUNT DRIVE
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PH: 570-847-9519
brian@bsalandplan.com

SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

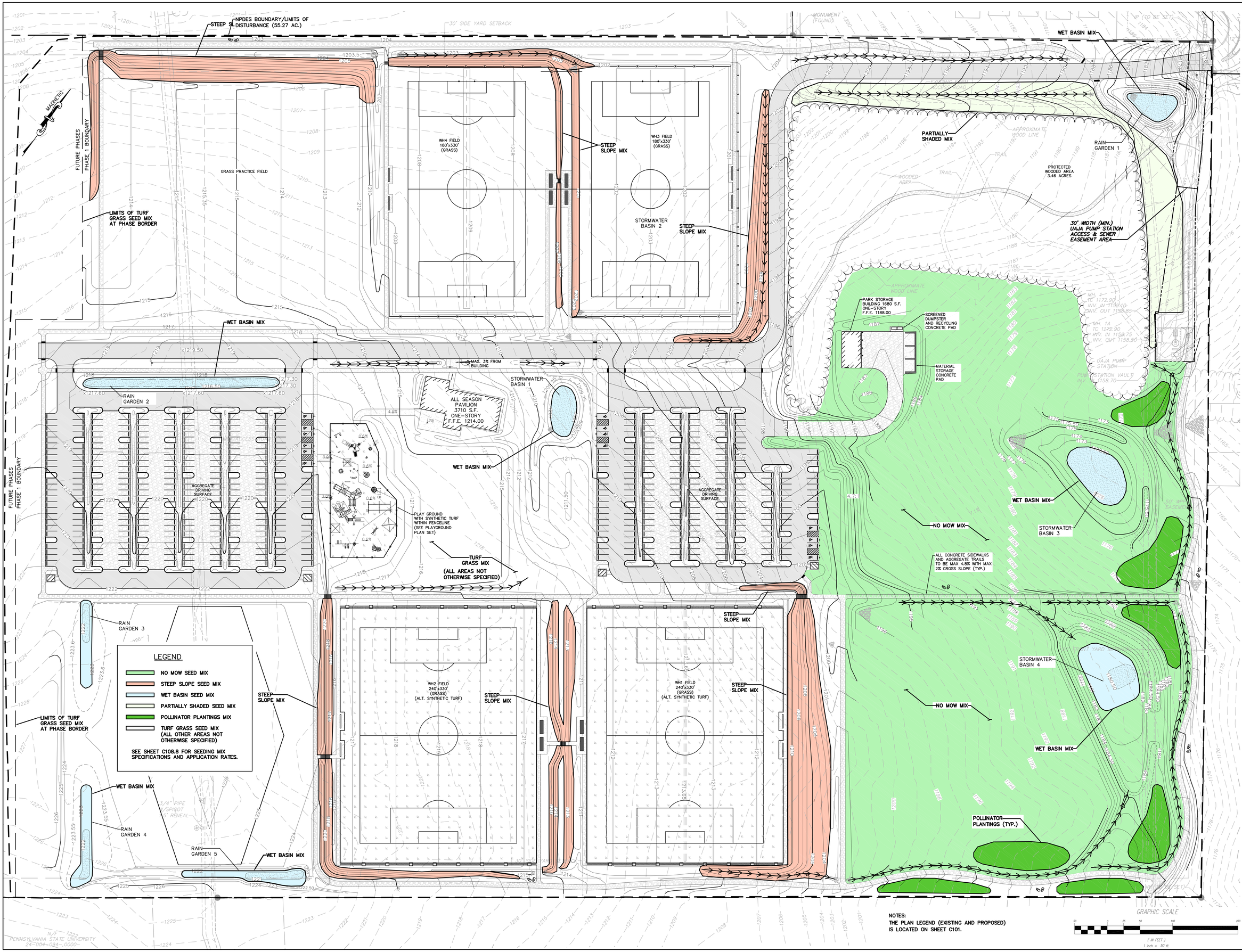
SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

Landscape Planting Plan
November 18, 2019

L100



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11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SEEDING PLAN

L100.1

Landscape Planting List

BUFFER YARD LANDSCAPING

Toll Brothers Development – 645 LF – Buffer Type C (2 Trees, 5 Understory Trees, 9 Shrubs / 100 LF)
Main Entry Drive Plantings and Wood's Edge Plantings*

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**13**	**13**
AS	Acer saccharum Sugar Maple	1.5" Cal.	B&B	70'	75'		1
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	75'	50'		5
QM	Quercus macrocarpa Burr Oak	1.5" Cal.	7 gal. or bareroot	70'	75'		2
QP	Quercus phellos Willow Oak	1.5" Cal.	7 gal. or bareroot	50'	40'		3
QS	Quercus shumardii Shumard Oak	1.5" Cal.	7 gal. or bareroot	50'	50'		2
	Understory Trees / Evergreen					**32**	**42**
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		10
OV	Ostrya virginiana American Hophornbeam	1.5" Cal.	7 gal. or bareroot	30'	20'		11
CC	Cercis canadensis Eastern Redbud	1" Cal.	5 gal. or bareroot	25'	25'		10
CF	Cornus florida Flowering Dogwood	1" Cal.	5 gal. or bareroot	25'	25'		11
	Shrubs					**58**	**28 = 30* = 58**
CS	Chaenomeles speciosa Flowering Quince	#2 Gal	3-4' Ht.	8'	8'		4
IG	Ilex glabra Inkberry	#2 Gal	3-4' Ht.	5'	8'		9
SC	Spirea x vanhouttei Vanhoutte Spirea	#2 Gal	3-4' Ht.	6'	10'		2
ST	Spirea thunbergii Thunberg Spirea	#2 Gal	3-4' Ht.	5'	5'		5
VB	Viburnum x burkwoodii Burkwood Viburnum	#2 Gal	3-4' Ht.	6'	8'		3
VD	Viburnum dilatatum Linden Viburnum	#2 Gal	3-4' Ht.	10'	8'		5

*Plants from the Woods Edge planting.
**Trees, Understory Trees and Shrubs in Entry Sign / Ornamental Memorial Garden planting.

Habitat and Pollinator Plantings — Additional Landscape Plantings **

Forested Edge / Flowering Roadside Mix	lbs.	16,000 SF / 0.37 Acres	Partially Shaded Area Roadside Seed Mix by Ernst Conservation Seed or approved equal

ENTRY SIGN - MEMORIAL PLANTINGS (INCLUDE IN BUFFER)

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**NA**	**1**
AS	Acer saccharum Sugar Maple	1.5" Cal.	B&B	70'	75'		1
	Understory Trees / Evergreen					**NA**	**3**
CF	Cornus florida Flowering Dogwood	1" Cal.	B&B	25'	25'		3
	Shrubs					**NA**	**30**
IG	Ilex glabra Inkberry	#2 Gal	3-4' Ht.	5'	8'		8
LB	Lindera benzoin Spicebush	#2 Gal	3-4' Ht.	8'	10'		7
SC	Spirea x vanhouttei Vanhoutte Spirea	#2 Gal	3-4' Ht.	6'	10'		7
VD	Viburnum dilatatum Linden Viburnum	#2 Gal	3-4' Ht.	10'	8'		8

Annual and Perennial Planting Beds — Additional Landscape Plantings **

Annual and Perennial Beds (4)	1,200 SF	4" Plugs*	1.5-3'	2-3'	NA	

*4" Plugs from New Moon Native Plant Nursery or approved equal

BUFFER YARD LANDSCAPING

SCBWA Land – 1,090 LF – Buffer Type D (2 Trees, 6 Understory Trees, 12 Shrubs / 100 LF)
North - Northwest Boundary to Buffer Future Native Grassland Planting and Source Water Protection Area

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**22**	**22**
GD	Gymnocladus dioicus Kentucky Coffee Tree	1.5" Cal.	7 gal. or bareroot	70'	50'		6
MG	Metasequoia glyptostroboides Dawn Redwood	6' Ht.	B&B	70'	30'		9
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	75'	50'		3
QP	Quercus phellos Willow Oak	1.5" Cal.	7 gal. or bareroot	50'	40'		4
	Understory Trees / Evergreen					**65**	**66**
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		11
OV	Ostrya virginiana American Hophornbeam	1.5" Cal.	7 gal. or bareroot	30'	20'		11
CC	Cercis canadensis Eastern Redbud	1" Cal.	5 gal. or bareroot	25'	25'		11
CF	Cornus florida Flowering Dogwood	1" Cal.	5 gal. or bareroot	25'	25'		11
MS	Malus 'Sutyzam 'Sugar Tyme 'Sugar Tyme' Flowering Crabapple	1" Cal.	5 gal. or bareroot	40'	35'		11
PSK	Prunus serrulata 'Kwanzan' Kwansan Flowering Cherry	1" Cal.	5 gal. or bareroot	30'	30'		11
	Shrubs					**131**	**131**
CS	Chaenomeles speciosa Flowering Quince	#2 Gal	3-4' Ht.	8'	8'		16
EF	Euonymus fortuneii var. Wintercreeper Euonymus	#2 Gal	3-4' Ht.	2'	4'		16
IG	Ilex glabra Inkberry	#2 Gal	3-4' Ht.	5'	8'		16
LB	Lindera benzoin Spicebush	#2 Gal	3-4' Ht.	8'	10'		17
SC	Spirea x vanhouttei Vanhoutte Spirea	#2 Gal	3-4' Ht.	6'	10'		16
ST	Spirea thunbergii Thunberg Spirea	#2 Gal	3-4' Ht.	5'	5'		17
VB	Viburnum x burkwoodii Burkwood Viburnum	#2 Gal	3-4' Ht.	6'	8'		17
VD	Viburnum dilatatum Linden Viburnum	#2 Gal	3-4' Ht.	10'	8'		16

BUFFER YARD LANDSCAPING

Penn State University Land (South) - 1,825 LF - Buffer Type A (6 Trees, 2 Understory Trees, 0 Shrubs / 100 LF)
South Boundary to Buffer Future Natural / Recreation Area

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**110**	**110**
GD	Gymnocladus dioicus Kentucky Coffee Tree	1.5" Cal.	7 gal. or bareroot	70'	50'		18
LS	Liquidambar styraciflua Sweet Gum	1.5" Cal. bareroot	7 gal. or	60'	40'		15
MG	Metasequoia glyptostroboides Dawn Redwood	6' Ht.	B&B	70'	30'		29
PP	Picea pungens var. glauca Colorado Blue Spruce	4-6' Ht.	B&B	60'	20'		8
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	75'	50'		17
QP	Quercus phellos Willow Oak	1.5" Cal.	7 gal. or bareroot	50'	40'		23
	Understory					**36**	**36**
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		6
CC	Cercis canadensis Eastern Redbud	1" Cal.	5 gal. or bareroot	25'	25'		6
CF	Cornus florida Flowering Dogwood	1" Cal.	5 gal. or bareroot	25'	25'		6
MS	Malus 'Sutyzam 'Sugar Tyme 'Sugar Tyme' Flowering Crabapple	1" Cal.	5 gal. or bareroot	40'	35'		6
OV	Ostrya virginiana American Hophornbeam	1.5" Cal.	7 gal. or bareroot	30'	20'		6
PSK	Prunus serrulata 'Kwanzan' Kwansan Flowering Cherry	1" Cal.	5 gal. or bareroot	30'	30'		6
	Shrubs					**0**	**0**

Habitat and Pollinator Plantings — Additional Landscape Plantings **

Pollinator Seed Mix	lbs.	5,500 SF / 0.13Acres	Mesic to Dry Native Pollinator Mix by Ernst Conservation Seed or approved equal
Little Bluestem Upland Meadow	lbs.	26,000 SF / 0.61 Acres	Schizachyrium scoparium PA-Ecotype

BUFFER YARD LANDSCAPING

Penn State University Land (East) - 1,320 LF - Buffer Type A (6 Trees, 2 Understory Trees, 0 Shrubs / 100 LF)
East Boundary to Buffer Future Natural / Recreation Area

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**79**	**79**
AS	Acer saccharum Sugar Maple	1.5" Cal.	7 gal. or bareroot	70'	50'		6
CaC	Carpinus caroliniana American Hornbeam	1" Cal.	5 gal. or bareroot	25'	25'		8
AG	Aesculus glabra Ohio Buckeye	1.5" Cal.	7 gal. or bareroot	40'	35'		7
GD	Gymnocladus dioicus Kentucky Coffee Tree	1.5" Cal.	7 gal. or bareroot	70'	50'		4
LT	Liriodendron tulipifera Tulip Tree	1.5" Cal.	7 gal. or bareroot	80'	40'		8
NS	Nyssa sylvatica Blackgum	1.5" Cal.	7 gal. or bareroot	40'	35'		8
LS	Liquidambar styraciflua Sweet Gum	1.5" Cal. bareroot	7 gal. or	60'	40'		8
OA	Oxydendron arboreum Sourwood	1.5" Cal.	7 gal. or	25'	20'		8
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	75'	50'		8
QM	Quercus macrocarpa Burr Oak	1.5" Cal.	7 gal. or bareroot	70'	75'		6
QP	Quercus palustris Pin Oak	1.5" Cal.	7 gal. or bareroot	75'	50'		8
	Understory					**26**	**26**
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		5
CF	Cornus florida Flowering Dogwood	1" Cal.	5 gal. or bareroot	25'	25'		5
MS	Malus 'Sutyzam 'Sugar Tyme 'Sugar Tyme' Flowering Crabapple	1" Cal.	5 gal. or bareroot	40'	35'		5
OV	Ostrya virginiana American Hophornbeam	1.5" Cal.	7 gal. or bareroot	30'	20'		5
PSK	Prunus serrulata 'Kwanzan' Kwansan Flowering Cherry	1" Cal.	5 gal. or bareroot	30'	30'		6
	Shrubs					**0**	**0**

Habitat and Pollinator Plantings — Additional Landscape Plantings **

Forested Edge / Flowering Roadside Mix	lbs.	7,150 SF / 0.16 Acres	Partially Shaded Area Roadside Seed Mix by Ernst Conservation Seed or approved equal
Pollinator Seed Mix	lbs.	14,000 SF / 0.32 Acres	Mesic to Dry Native Pollinator Mix by Ernst Conservation Seed or approved equal
Little Bluestem Upland Meadow	lbs.	40,000 SF / 0.91 Acres	Schizachyrium scoparium PA-Ecotype

PARKING LOT (EAST)

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**20**	**26**
AR	Acer rubrum 'Red Sunset' Red Sunset Red Maple	1.5" Cal.	B&B	50'	40'		13
PxA	Platanus x acerifolia 'Bloodgood' Bloodgood Planetree	1.5" Cal.	7 gal. or bareroot	70'	65'		13

PARKING LOT (WEST)

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Trees					**29**	**34**
AR	Acer rubrum 'Red Sunset' Red Sunset Red Maple	1.5" Cal.	B&B	50'	40'		17
PxA	Platanus x acerifolia 'Bloodgood' Bloodgood Planetree	1.5" Cal.	7 gal. or bareroot	70'	65'		17

PARK STORAGE BUILDING AREA PLANTINGS

Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity – Req. by Ordinance	Phase I Quantity
	Shrubs						
VD	Viburnum dilatatum Linden Viburnum	#2 gal.	3-4' Ht.	10'	8'	11	11

NOTE:
The Landscape Planting Plan depicted here represents the landscape architect's best attempt to meet the municipal landscape buffer planting requirements. Because the 30' landscape buffer also contains an internal park trail and a regional greenway trail, it was difficult to design a landscape buffer and an appropriately landscaped trail corridor. A variance was requested and denied by the township to allow for flexibility in the buffer design to achieve an appropriate buffer-with-trail solution. The current plan ignores the safety and security concerns we have for future trail users by creating dense plantings with limited visual access to the trail. The plantings will also be providing buffers where none are needed, between compatible land uses focused on recreation and conservation. A much less dense planting would be preferred to allow for better performance of the plant material, enhanced trail-user experience, and improved public safety.

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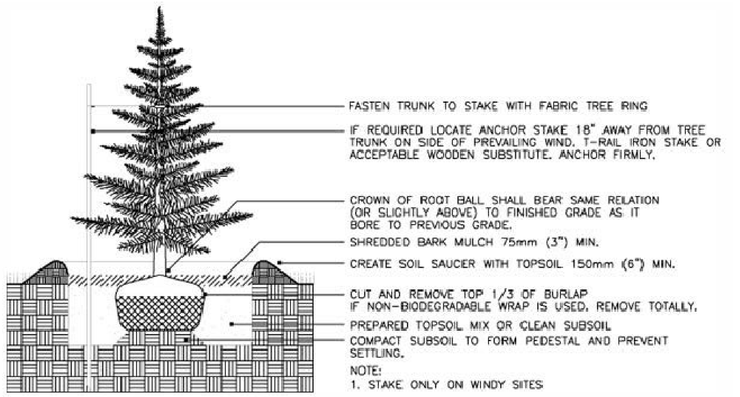
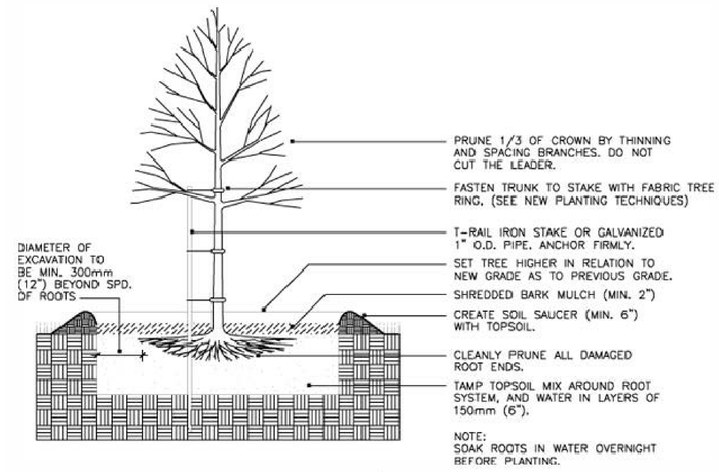
WHITEHALL ROAD REGIONAL PARK PHASE 1

Landscape Planting Plan
November 18, 2019

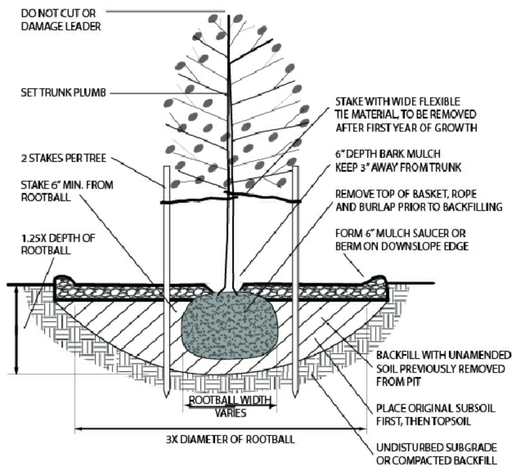
L101



EVERGREEN TREE PLANTING DETAIL
N.T.S.

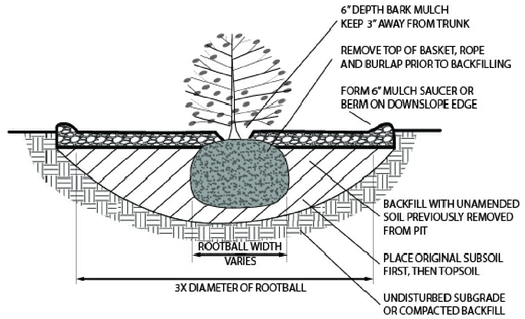


UNDERSTORY TREE (BARE ROOT) PLANTING DETAIL
N.T.S.



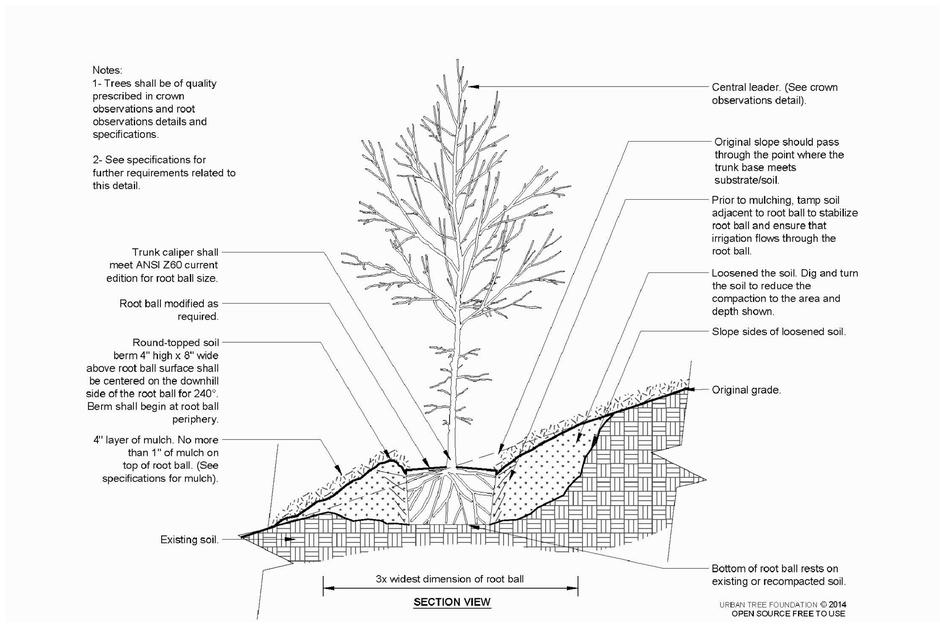
NOTES:
1. TREE SHALL BE MARKED ON ITS NORTH FACING SIDE AT NURSERY. TREE SHALL BE PLANTED WITH ORIGINAL NORTH FACING SIDE FACING NORTH ON SITE.
2. REMOVE AND SEPARATE TOPSOIL AND SUBSOIL FROM PLANTING HOLE FOR USE AS BACKFILL.
3. IF ROOTBALL IS PACKAGED IN 'PLASTIC BURLAP' OR TREATED BURLAP, REMOVE BURLAP COMPLETELY.
4. HEAL-IN SOIL AROUND THE ENTIRE ROOTBALL TO ELIMINATE AIR POCKETS.
5. WATER AFTER PLANTING AND AS NECESSARY UNTIL ESTABLISHED.
6. PLANT SHRUBS IN SPRING (APRIL - MAY) OR FALL (SEPTEMBER - EARLY OCTOBER).
7. DO NOT DAMAGE MAIN ROOTS OR ROOT BALL WHEN INSTALLING TREE STAKES.
8. ALL STAKES, GUYWIRES, AND TIES TO BE REMOVED AFTER THE FIRST YEAR OF GROWTH, UNLESS OTHERWISE SPECIFIED BY THE LANDSCAPE ARHICTECT.

CANOPY TREE PLANTING DETAIL
N.T.S.



NOTES:
1. REMOVE AND SEPARATE TOPSOIL AND SUBSOIL FROM PLANTING HOLE FOR USE AS BACKFILL.
2. REMOVE TOP OF BASKET, ROPE AND BURLAP PRIOR TO BACKFILLING.
3. IF ROOTBALL IS PACKAGED IN 'PLASTIC BURLAP' OR TREATED BURLAP, REMOVE BURLAP COMPLETELY.
4. HEAL-IN SOIL AROUND THE ENTIRE ROOTBALL TO ELIMINATE AIR POCKETS.
5. WATER AFTER PLANTING AND AS NECESSARY UNTIL ESTABLISHED.
6. PLANT SHRUBS IN SPRING (APRIL - MAY) OR FALL (SEPTEMBER - EARLY OCTOBER).

SHRUB PLANTING DETAIL
N.T.S.



TREE PLANTING ON SLOPE DETAIL
N.T.S.

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BSA / LA
182 FAIRMOUNT DRIVE
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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

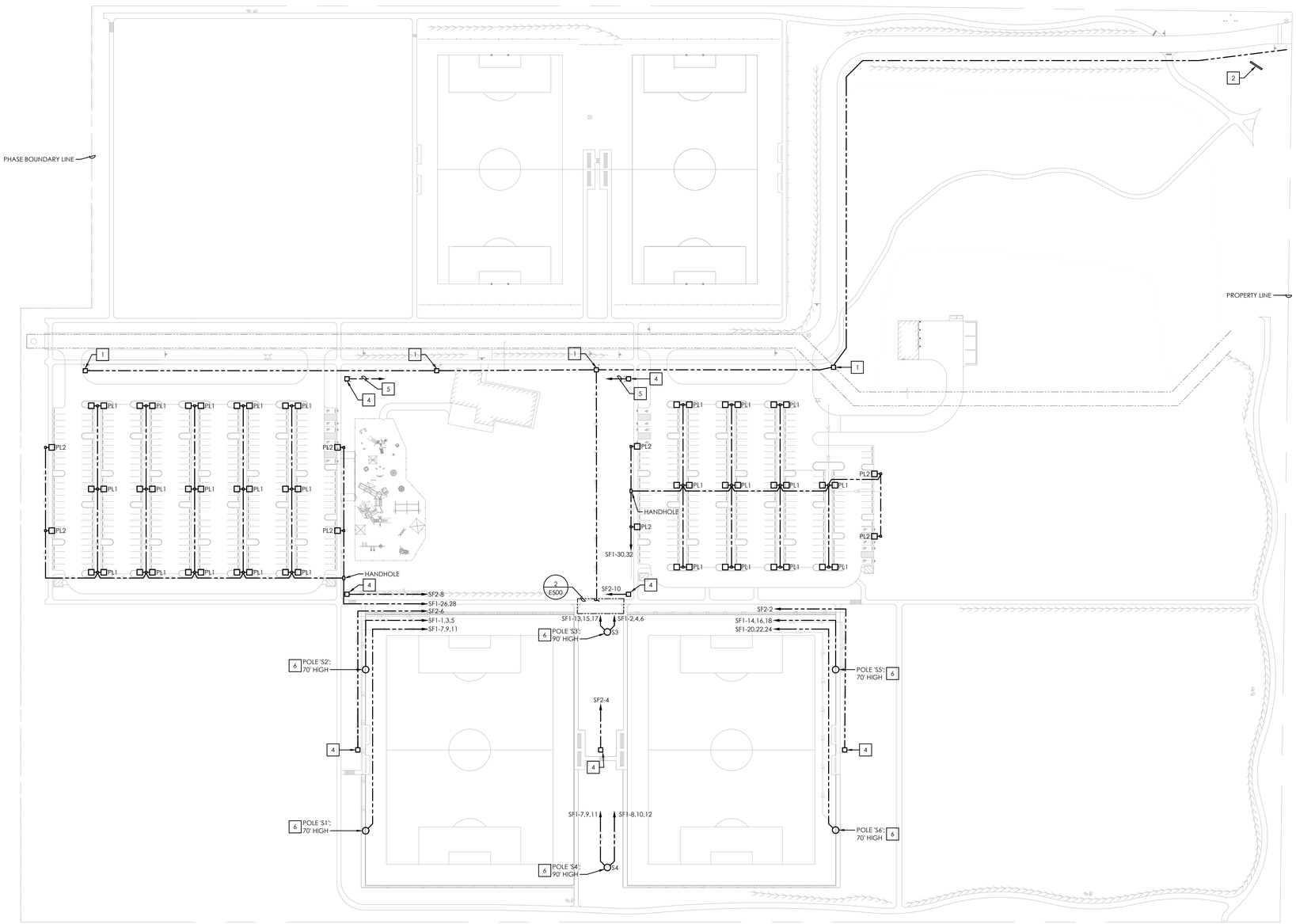
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

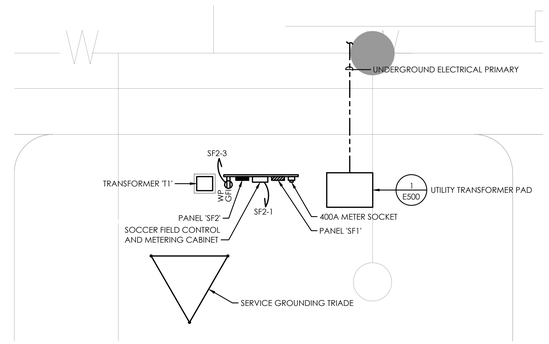
<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
LANDSCAPING DETAILS

L102



1 / E100 SITE PLAN - ELECTRICAL
SCALE: 1" = 70'-0"



2 / E100 SOCCER FIELD ELECTRICAL SERVICE - ENLARGED PLAN
SCALE: 1" = 70'-0"

PANELBOARD SCHEDULE: PANELBOARD 'SF1'

VOLTAGE RATING: 277/480V, 3PH, 4W + G | MIN. AIC RATING: 65,000 A
MAINS TYPE: 300A MCB | ENCLOSURE RATING: NEMA 4X | LOCATION: SOCCER FIELDS
BUS RATING: 400 A | FEED-THRU LUGS: NO | FED FROM: UTILITY XFMR

CKT NO.	FEEDER	LOAD DESCRIPTION	BKR P	BKR AMP	LOAD (KVA) A	LOAD (KVA) B	LOAD (KVA) C	BKR AMP	BKR P	LOAD DESCRIPTION	FEEDER	CKT NO.
1					5.76	5.76						2
3	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S1	3	30		5.76	5.76	30	3	SOCCER FIELD #WH1 LIGHTING - POLE S3	40.4G	4
5							5.76	5.76				6
7					5.76	5.76						8
9	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S2	3	30		5.76	5.76	30	3	SOCCER FIELD #WH1 LIGHTING - POLE S4	40.4G	10
11							5.76	5.76				12
13					6.46	5.76						14
15	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S3	3	30		6.46	5.76	30	3	SOCCER FIELD #WH1 LIGHTING - POLE S5	40.4G	16
17							6.46	5.76				18
19					6.46	5.76						20
21	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S4	3	30		6.46	5.76	30	3	SOCCER FIELD #WH1 LIGHTING - POLE S6	40.4G	22
23							6.46	5.76				24
25					0.00	0.00						26
27	30.3G	PANELBOARD SF2	3	25		0.00	0.00	20	2	WEST PARKING LOT	40.2G	28
29							0.00	0.00				30
31	-	PROVISIONS	-	-	0.00	0.00						32
33	-	PROVISIONS	-	-		0.00	0.00	-	-	PROVISIONS	-	34
35	-	PROVISIONS	-	-			0.00	0.00	-	-	PROVISIONS	-	36
37	-	PROVISIONS	-	-	0.00	0.00			-	-	PROVISIONS	-	38
39	-	PROVISIONS	-	-		0.00	0.00		-	-	PROVISIONS	-	40
41	-	PROVISIONS	-	-			0.00	0.00	-	-	PROVISIONS	-	42
					47.50	47.50	47.50					

PANELBOARD NOTES:

DEMAND FACTOR: 100.0 %
TOTAL CONNECTED: 145.5 kVA 175.0 A
TOTAL DEMAND: 145.5 kVA 175.0 A

PANELBOARD SCHEDULE: PANELBOARD 'SF2'

VOLTAGE RATING: 120/208V, 3PH, 4W + G | MIN. AIC RATING: 22,000 A
MAINS TYPE: 50A MCB | ENCLOSURE RATING: NEMA 4X | LOCATION: SOCCER FIELDS
BUS RATING: 100 A | FEED-THRU LUGS: NO | FED FROM: PANEL SF1

CKT NO.	FEEDER	LOAD DESCRIPTION	BKR P	BKR AMP	LOAD (KVA) A	LOAD (KVA) B	LOAD (KVA) C	BKR AMP	BKR P	LOAD DESCRIPTION	FEEDER	CKT NO.
1	20.2G	SPORTS LTG CONTROL PANEL	1	20	1.00	0.36		20	1	RECEPTACLE PEDESTAL	40.2G	2
3	20.2G	REC. AT PANELBOARD	1	20		0.18	0.36	20	1	RECEPTACLE PEDESTAL	40.2G	4
5	-	SPARE	1	20			0.00	0.36	20	1	RECEPTACLE PEDESTAL	40.2G	6
7	-	SPARE	1	20	0.00	0.36			20	1	RECEPTACLE PEDESTAL	40.2G	8
9	-	SPARE	1	20		0.00	0.36		20	1	RECEPTACLE PEDESTAL	40.2G	10
11	-	SPARE	1	20			0.00	0.00	20	1	SPARE	-	12
13	-	SPARE	1	20	0.00	0.00			20	1	SPARE	-	14
15	-	SPARE	1	20		0.00	0.00		20	1	SPARE	-	16
17	-	SPARE	1	20			0.00	0.00	20	1	SPARE	-	18
19	-	SPARE	1	20	0.00	0.00			20	1	SPARE	-	20
21	-	PROVISIONS	-	-		0.00	0.00		-	-	PROVISIONS	-	22
23	-	PROVISIONS	-	-			0.00	0.00	-	-	PROVISIONS	-	24
25	-	PROVISIONS	-	-	0.00	0.00			-	-	PROVISIONS	-	26
27	-	PROVISIONS	-	-		0.00	0.00		-	-	PROVISIONS	-	28
29	-	PROVISIONS	-	-			0.00	0.00	-	-	PROVISIONS	-	30
					1.72	0.90	0.36					

PANELBOARD NOTES:

DEMAND FACTOR: 100.0 %
TOTAL CONNECTED: 3.0 kVA 8.3 A
TOTAL DEMAND: 3.0 kVA 8.3 A

LIGHTING FIXTURE SCHEDULE

TAG	MANUFACTURER & SERIES	DESCRIPTION	PERFORMANCE: LIGHT SOURCE	VOLTAGE (V)	LUMINAIRE WATTS (W)	DELIVERED LUMENS (LM)	COLOR TEMP (K)	DIMMING STYLE	CRI (MINIMUM)	LUMEN MAINT.	MOUNTING: TYPE	HEIGHT (AFF)	COMMENTS
PL1	LITHONIA - D-SERIES SIZE 0 AREA OR APPROVED EQUAL BY HUBBELL OR LSI	26'L x 13"W x 7'D POLE MOUNTED LED AREA LUMINAIRE, DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK, DARK BRONZE FINISH. TYPE III MEDIUM DISTRIBUTION OPTICS. IP66 RATING. 22'-0" SQUARE POLE WITH DARK BRONZE FINISH.	LED	UNV/ MVOLT	38.0	4700	4000	0-10	70	L85 @ 100,000 HRS	POLE	25'-0"	MOUNT FIXTURE TO 4" SQUARE ALUMINUM POLE (SAME MANUFACTURER AND FINISH. REFER TO DETAIL 3/ES00 FOR POLE AND BASE INSTALLATION DETAILS.
PL2	LITHONIA - D-SERIES SIZE 0 AREA OR APPROVED EQUAL BY HUBBELL OR LSI	26'L x 13"W x 7'D POLE MOUNTED LED AREA LUMINAIRE, DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK, DARK BRONZE FINISH. TYPE IV MEDIUM DISTRIBUTION OPTICS. IP66 RATING. 22'-0" SQUARE POLE WITH DARK BRONZE FINISH. HOUSE SIDE SHIELD.	LED	UNV/ MVOLT	38.0	4700	4000	0-10	70	L85 @ 100,000 HRS	POLE	25'-0"	MOUNT FIXTURE TO 4" SQUARE ALUMINUM POLE (SAME MANUFACTURER AND FINISH. REFER TO DETAIL 3/ES00 FOR POLE AND BASE INSTALLATION DETAILS.

NOTES:

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF LUMINAIRE HEADS	# OF DRIVERS	VOLTAGE	PHASE	FULL LOAD AMPS *	CONTACTOR SIZE (A)	CONTACTOR ID	ZONE
S1	SOCCER FIELD #1	13	13	480	3	20.8	30	C1	1
S2	SOCCER FIELD #1	13	13	480	3	20.8	30	C2	1
S3	SOCCER FIELD #1	14	14	480	3	23.3	30	C3	1
S4	SOCCER FIELD #1	14	14	480	3	23.3	30	C4	1
S3	SOCCER FIELD #2	13	13	480	3	20.8	30	C5	2
S4	SOCCER FIELD #2	13	13	480	3	20.8	30	C6	2
S5	SOCCER FIELD #2	13	13	480	3	20.8	30	C7	2
S6	SOCCER FIELD #2	13	13	480	3	20.8	30	C8	2

NOTES:
* = BASED ON AMPS PER DRIVER.

TRANSFORMER SCHEDULE

TAG	KVA	PRIMARY VOLTAGE	SECONDARY VOLTAGE	MOUNTING	ENCLOSURE	NOTES
T1	15	480V Δ	120/208V Y	PAD	4X	-

BRANCH CIRCUIT & FEEDER SCHEDULE

KEY	NO. SETS	CONDUCTORS (AWG - KCMIL) (PER SET)	PATHWAY (PER SET)	CONDUCTOR TEMP. RATING
20.2G	1	2#12 & 1#12G	3/4" C	60° C
30.2G	1	2#10 & 1#10G	3/4" C	60° C
40.2G	1	2#8 & 1#10G	3/4" C	60° C
55.2G	1	2#6 & 1#10G	3/4" C	60° C
70.2G	1	2#4 & 1#8G	3/4" C	60° C
85.2G	1	2#3 & 1#8G	1" C	60° C
95.2G	1	2#2 & 1#8G	1" C	60° C
100.2G	1	2#3 & 1#8G	1" C	75° C
400.2G	1	2#600 & 1#3G	2-1/2" C	75° C
20.3G	1	3#12 & 1#12G	3/4" C	60° C
30.3G	1	3#10 & 1#10G	3/4" C	60° C
40.3G	1	3#8 & 1#10G	3/4" C	60° C
55.3G	1	3#6 & 1#10G	3/4" C	60° C
70.3G	1	3#4 & 1#8G	1" C	60° C
85.3G	1	3#3 & 1#8G	1" C	60° C
95.3G	1	3#2 & 1#8G	1" C	60° C
100.3G	1	3#3 & 1#8G	1-1/4" C	75° C
400.3G	1	3#600 & 1#3G	3" C	75° C
20.4G	1	4#12 & 1#12G	3/4" C	60° C
30.4G	1	4#10 & 1#10G	3/4" C	60° C
40.4G	1	4#8 & 1#10G	3/4" C	60° C
55.4G	1	4#6 & 1#10G	1" C	60° C
70.4G	1	4#4 & 1#8G	1-1/4" C	60° C
85.4G	1	4#3 & 1#8G	1-1/4" C	60° C
95.4G	1	4#2 & 1#8G	1-1/4" C	60° C
100.4G	1	4#3 & 1#8G	1-1/4" C	75° C
400.4G	1	4#600 & 1#3G	3-1/2"C	75° C

NOTES:
1.) TABLE BASED ON THE ALLOWABLE AMPACITIES OF COPPER CONDUCTORS IN TABLE 310.15 (B) (16) IN THE 2017 EDITION OF NFPA 70: NATIONAL ELECTRICAL CODE.
2.) TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED 100 AMPERES OR LESS, OR MARKED FOR 14AWG THROUGH 1 AWG CONDUCTORS SHALL BE USED FOR THE FOLLOWING:
(1) CONDUCTORS RATED 60°C (140°F).
(2) CONDUCTORS WITH HIGHER TEMPERATURE RATINGS, PROVIDED THE AMPACITY OF SUCH CONDUCTORS IS DETERMINED BASED ON THE 60°C (140°F) AMPACITY OF THE CONDUCTOR SIZE USED.
(3) CONDUCTORS WITH HIGHER TEMPERATURE RATINGS IF THE EQUIPMENT IS LISTED AND IDENTIFIED FOR USE WITH SUCH CONDUCTORS.
(4) FOR MOTORS MARKED WITH DESIGN LETTERS B, C OR D, CONDUCTORS HAVING AN INSULATION RATING OF 75°C (167°F) IR HIGHER SHALL BE PERMITTED TO BE USED, PROVIDED THE AMPACITY OF SUCH CONDUCTORS DOES NOT EXCEED THE 75°C (167°F) AMPACITY.
3.) TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED OVER 100 AMPERES, OR MARKED FOR CONDUCTORS LARGER THAN 1 AWG, SHALL BE USED ONLY FOR ONE OF THE FOLLOWING:
(1) CONDUCTORS RATED 75°C (167°F).
(2) CONDUCTORS WITH HIGHER TEMPERATURE RATINGS, PROVIDED THE AMPACITY OF SUCH CONDUCTORS DOES NOT EXCEED THE 75°C (167°F) AMPACITY OF THE CONDUCTOR SIZE USED, OR UP TO THEIR AMPACITY IF THE EQUIPMENT IS LISTED AND IDENTIFIED FOR USE WITH SUCH CONDUCTORS.
4.) MINIMUM CONDUIT SIZED BASED ON 90°C RATED CONDUCTORS WITH THHN INSULATION IN EMT. PROVIDE CONDUIT SIZE BASED ON NEC REQUIREMENTS IF OTHER PATHWAY TYPE IS USED.
5.) PROVIDE AN INDIVIDUAL CONDUIT FOR EACH FEEDER SET OF CONDUCTORS.

GENERAL NOTES:

1. ALL UNDERGROUND BRANCH CIRCUITING SHALL BE INSTALLED IN 1-1/4" MINIMUM PVC SCHEDULE 80 CONDUIT.
2. CONDUIT ROUTINGS SHOWN ON PLAN ARE DIAGRAMMATIC. DETERMINE EXACT ROUTING IN FIELD.

KEY NOTES:

1. ELECTRICAL UTILITY SWITCH AND COMMUNICATIONS SERVICE PEDESTAL.
2. ILLUMINATED FACILITY SIGN. FURNISH AND INSTALL ELECTRICAL UTILITY METER AND FUSED DISCONNECT.
3. UNDERGROUND ELECTRICAL UTILITY PRIMARY AND COMMUNICATIONS SERVICE DUCTBANK.
4. RECEPTACLE PEDESTAL/BOLLARD.
5. CIRCUIT SHALL ORIGINATE IN PAVILLION BUILDING.
6. POLE AND LIGHTING FIXTURES INSTALLED BY SPORTS LIGHTING MANUFACTURER. BASIS OF DESIGN IS BY MUSCO, UTILIZING THEIR ADJUSTABLE TLC-LED-1150 HEADS.

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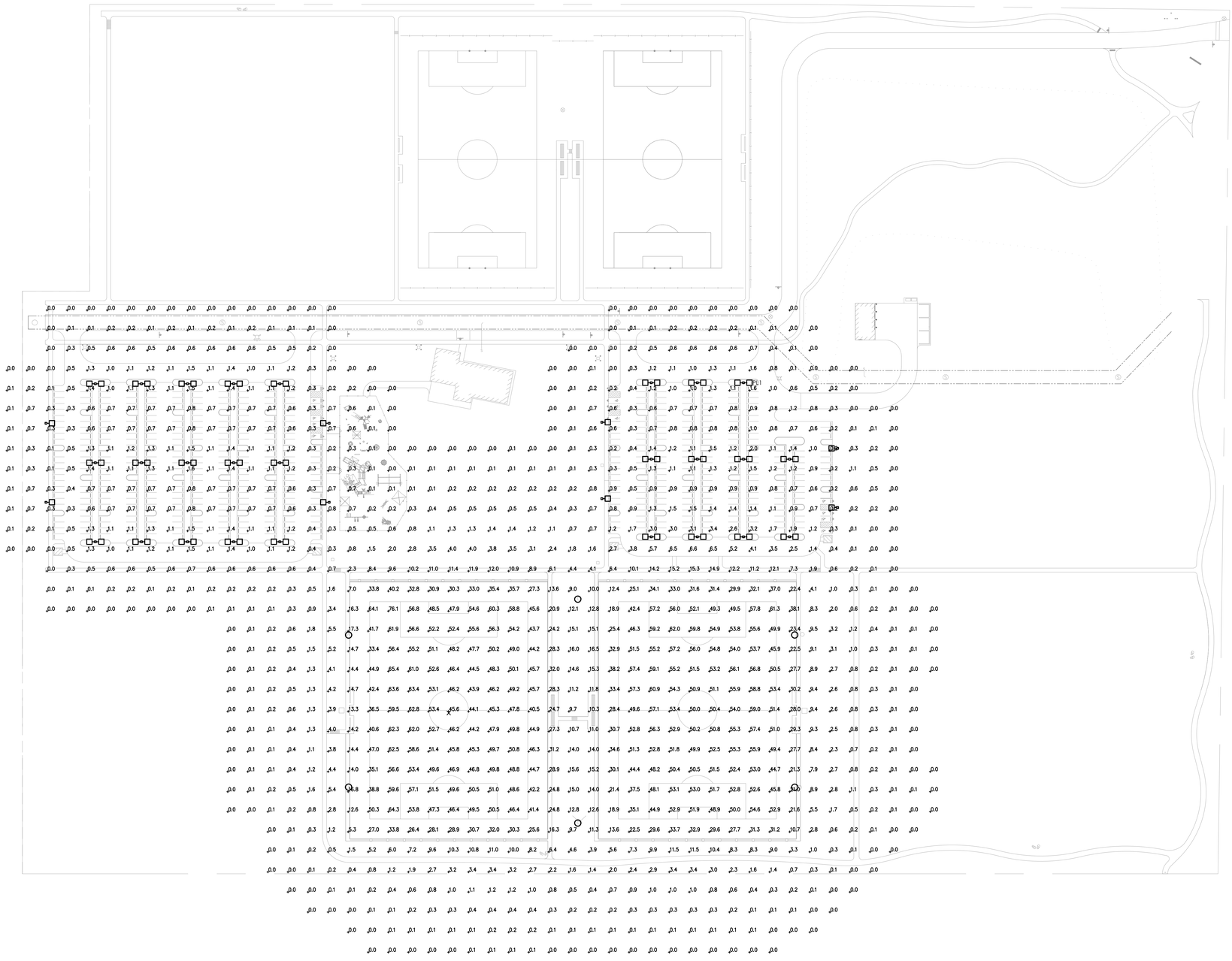
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE PLAN - ELECTRICAL

E100



1 LIGHITNG CALCULATION SUMMARY - OVERALL SITE
E101 SCALE: 1" = 70'-0"

SITE LIGHTING CALCULATION SUMMARY					
CALCULATION AREA	AVERAGE (FC)	MAXIMUM (FC)	MINIMUM (FC)	AVG : MIN	MAX : MIN
ENTIRE SITE	-	76.1	0.0	-	-
PARKING LOT EAST	0.80	2.20	0.10	8.00	22.0
PARKING LOT WEST	0.80	1.70	0.10	8.00	17.0
SOCCER FIELD EAST	51.1	65.1	34.3	1.49	1.90
SOCCER FIELD WEST	51.1	66.6	37.5	1.36	1.78

NOTES:
* = MEASUREMENTS TAKEN AT 36" ABOVE GRADE.

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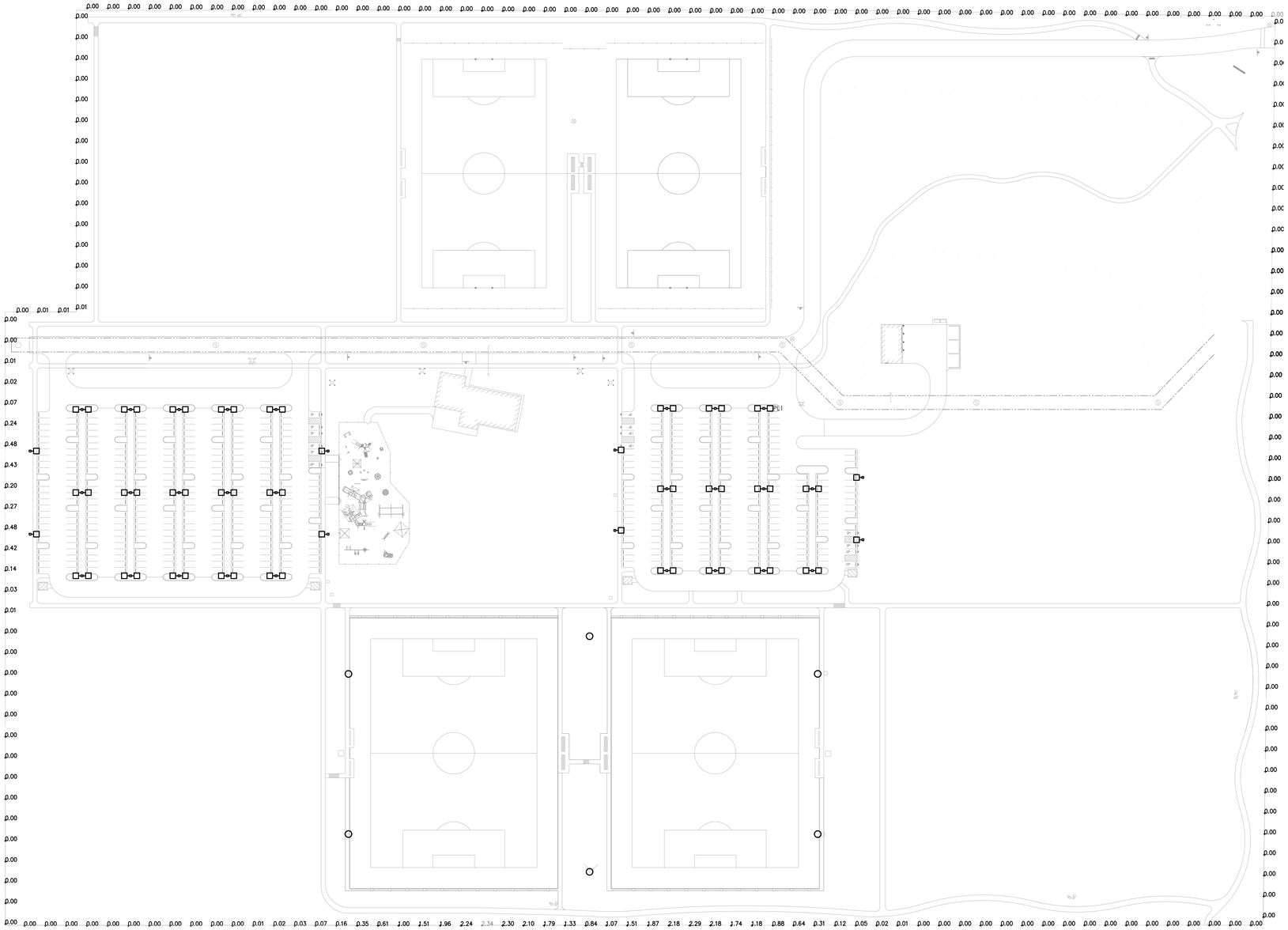
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE PLAN - LIGHTING CALCULATIONS

E101



1 LIGHITNG CALCULATION SUMMARY - PROPERTY LINE
E101 SCALE: 1" = 70'-0"

SITE LIGHTING CALCULATION SUMMARY					
CALCULATION AREA	AVERAGE (FC)	MAXIMUM (FC)	MINIMUM (FC)	AVG : MIN	MAX : MIN
PROPERTY LINE (HORIZONTAL)	0.18	2.34	0.00	-	-
NOTES: * = MEASUREMENTS TAKEN AT 36" ABOVE GRADE.					

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WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE PLAN - LIGHTING CALCULATIONS

E102

ABBREVIATIONS

&	AND
°	DEGREES
Ø	PHASE
(E)	EXISTING
(R)	RELOCATED
A	AMPS
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT CIRCUIT INTERRUPTOR
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CU	COPPER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRIC OR ELECTRICAL
E.O.	ELECTRONICALLY OPERATED
EMG	EMERGENCY
EXH	EXHAUST
F D	FIRE DAMPER
F/S D	FIRE/SMOKE DAMPER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAEP	FIRE ALARM EXTENDER PANEL
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
G	GROUND
GND	GROUND
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GEN	GENERATOR
HP	HORSEPOWER
KIT	KITCHEN
kW	KILO WATTS
kVA	KILO VOLT-AMPERES
LED	LIGHT EMITTING DIODE
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
LSI	LONG, SHORT AND INSTANTANEOUS TRIP CB
LSIG	LSI CB WITH GROUND FAULT PROTECTION
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MECH	MECHANICAL
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION DEVICE
MTD	MOUTED
MTR	MOTOR
N	NEUTRAL
N/E	NORMAL/EMERGENCY
OE	OVERHEAD ELECTRIC
OE/T	OVERHEAD ELECTRIC & TELECOM.
OL	OVERLOAD
PB	PUSH-BUTTON
PC	PLUMBING CONTRACTOR
PH	PHASE
PL	PILOT LIGHT
PNL	PANEL
REC	RECEPTACLE
RM	ROOM
S D	SMOKE DAMPER
SD	SMOKE DETECTOR
UC	UNDERCABINET
UE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS LABORATORY
UT	UNDERGROUND TELECOMMUNICATIONS
W	WIRE
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL REQUIREMENTS

A. GENERAL:
1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY SHOW ALL OFFSETS AND FITTINGS THAT WILL BE REQUIRED. COORDINATE CAREFULLY WITH EXISTING UTILITIES, EQUIPMENT AND STRUCTURE.
2. IT IS THE GENERAL INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE CONTRACTOR FURNISH AND INSTALL A COMPLETE AND WORKABLE ELECTRICAL SYSTEM IN COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS AND TO THE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL FIELD CONDITIONS PRIOR TO PLACING BID, PURCHASING EQUIPMENT OR MATERIALS AND COMMENCEMENT OF ANY WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. REPORT ANY OBSERVED CODE VIOLATIONS OF EXISTING SYSTEMS TO ENGINEER.
5. THE CONTRACTOR SHALL FURNISH, TO THE JOBSITE, AND INSTALL ALL EQUIPMENT AND MATERIALS SPECIFIED IN THE TECHNICAL SECTIONS OF THIS SPECIFICATION. THE INSTALLATION SHALL INCLUDE ALL ACCESSORIES REQUIRED TO ASSURE A COMPLETE AND WORKABLE INSTALLATION.
6. THE WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION, PERMITS, INSPECTION FEES, SERVICES AND ALL NECESSARY RELATED ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
7. BEFORE SUBMITTAL OF BID, THOROUGHLY EXAMINE THE SITE. NO CLAIM FOR EXTRA COMPENSATION WILL BE RECOGNIZED IF DIFFICULTIES ARE ENCOUNTERED WHICH AN EXAMINATION OF SITE CONDITIONS, PRIOR TO EXECUTING CONTRACT WOULD HAVE REVEALED.

B. CODE AND REGULATIONS: THE ENTIRE INSTALLATION SHALL CONFORM WITH ALL PERTINENT ORDINANCES, CODES AND REGULATIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE 2008 VERSION OF THE NATIONAL ELECTRICAL CODE (NEC) AND OTHER REGULATORY BODIES HAVING JURISDICTION OVER THIS CLASS OF WORK.

C. COORDINATION: ELECTRICAL CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL ELECTRICAL OUTAGES WITH THE OWNER. A MINIMUM OF TWO WEEK (14-DAYS) PRIOR TO SHUTDOWN.

D. SHOP DRAWINGS AND PRODUCT DATA
1. ALL EQUIPMENT MATERIALS SHALL BE AS SPECIFIED HEREIN.
2. THE FOLLOWING MATERIALS AND EQUIPMENT SHALL BE SUBMITTED:
   a. FIRESTOPPING MATERIALS.
   b. TRANSFORMERS.
   c. SERVICE SWITCHES AND GANG METERS.
   d. PANELBOARDS & CIRCUIT BREAKERS.
   e. DISCONNECT SWITCHES.
   f. LIGHTING FIXTURES AND LAMPS.
   g. DEVICES, FACEPLATES AND BOXES.
   h. RECEPTACLES.
   i. LIGHTING SWITCHES AND CONTROLS.
   j. TELECOMMUNICATIONS OUTLETS & CABLING
   k. BUILDING POWER WIRING AND CONDUIT.
   l. FIRE ALARM SYSTEM AND COMPONENTS (DETECTION AND NOTIFICATION APPLIANCES, ETC.).

E. GUARANTEE: THE ENTIRE INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, BY THE OWNER, UNLESS OTHERWISE SPECIFIED, AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP, IN ACCORDANCE WITH THE TERMS OF THE CONTRACT. GUARANTEE SHALL COVER THE REPLACEMENT, WITHOUT COST TO THE OWNER OF ANY AND ALL ITEMS THAT SHALL BECOME DEFECTIVE WITHIN THE STATED TIME.

F. REMOVAL OF RUBBISH: PERIODICALLY AND AT THE COMPLETION OF THE WORK CONTEMPLATED UNDER THESE SPECIFICATIONS, THE CONTRACTOR SHALL REMOVE FROM THE BUILDING AND SITE ALL RUBBISH AND ACCUMULATED MATERIALS OF WHATEVER NATURE NOT CAUSED BY OTHER TRADES, AND SHALL LEAVE THE WORK IN A CLEAN, ORDERLY AND ACCEPTABLE CONDITION.

G. MATERIALS AND EQUIPMENT: ALL EQUIPMENT OR APPARATUS OF ANY ONE SYSTEM MUST BE THE PRODUCT OF ONE MANUFACTURER, OR EQUIVALENT PRODUCTS OF A NUMBER OF MANUFACTURERS WHICH ARE SUITABLE FOR USE IN A UNIFIED OR ASSEMBLED SYSTEM. ALL MATERIALS AND EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT SHALL BE NEW.

H. EQUIPMENT SUPPORTS AND ACCESS: FURNISH AND INSTALL ALL STRUCTURAL STEEL MEMBERS, HANGERS AND SUPPORTS AS REQUIRED FOR SUPPORT OF EQUIPMENT AND MATERIALS (CONDUIT, EQUIPMENT, DEVICES, ETC.) IN ACCORDANCE WITH INDUSTRY STANDARDS. EXTERIOR SUPPORTS SHALL BE GALVANIZED STAINLESS STEEL.

I. FINISH AND ACCESSORIES: THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL WORK AND ALL FINISH CONDITIONS AFFECTING HIS WORK. HE SHALL ARRANGE HIS WORK IN ACCORDANCE WITH SUCH CONDITIONS, FURNISHING ALL ACCESSORIES TO MEET SUCH CONDITIONS.

J. CUTTING, PATCHING AND PAINTING:
1. PROVIDE ALL CUTTING AND PATCHING FOR LINTELS, RECESSES, CHASES, AND MAJOR OPENINGS IN ROOFS, WALLS, FLOORS, CEILINGS, AND PARTITIONS TO RECEIVE CONDUITS, BUS DUCTS, AND EQUIPMENT.
2. PROVIDE ALL CUTTING AND PATCHING FOR MINOR OPENINGS, AND REPAIR ALL DAMAGED AREAS, PAINT SHALL MATCH EXISTING SURROUNDINGS
3. ALL CUTTING AND PATCHING SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER BY WORKMEN SKILLED IN THE APPLICABLE TRADE INVOLVED, AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER/ARCHITECT.
4. THE CONTRACTOR SHALL FURNISH AND PLACE ALL SLEEVES REQUIRED FOR CONDUITS, BUS DUCTS, ETC., PASSING THROUGH ROOFS, FLOORS, WALLS, AND CEILINGS ALL ANCHORS AND INSERTS REQUIRED FOR CONDUITS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT.

J. FIELD QUALITY CONTROL:
1. INSPECTION AND TESTING OF ALL APPLICABLE ELECTRICAL EQUIPMENT SHALL BE DONE IN ACCORDANCE WITH THE LATEST VERSION OF NETA TESTING SPECIFICATIONS.
2. PERFORM SYSTEM FUNCTION TESTS UPON COMPLETION OF THE EQUIPMENT TESTS AS OUTLINED. IT IS THE PURPOSE OF THE SYSTEM FUNCTION TESTS TO PROVE THE CORRECT INTERACTION OF ALL SENSING, PROCESS AND ACTION DEVICES.

K. INSPECTION AND TESTING: ELECTRICAL WORK SHALL BE INSPECTED BY THE CODE OFFICIAL AS PRESCRIBED BY THE MUNICIPALITY THE WORK IS BEING PERFORMED IN.

L. PROJECT CLOSE-OUT:
1. CLEAN ALL WORK AT PROJECT COMPLETION, SUBJECT TO ACCEPTANCE OF OWNER.
2. MAINTAIN A RECORD SET OF DRAWINGS SHOWING ALL CHANGES DURING CONSTRUCTION PROCESS. DELIVER THESE RECORD DRAWINGS TO ARCHITECT AT COMPLETION OF PROJECT.

ELECTRICAL SYMBOLS

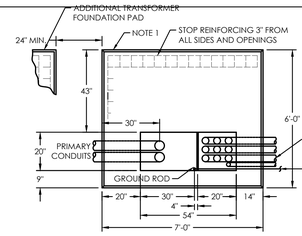
- 120V 20A DUPLEX RECEPTACLE
- PANELBOARD: 120/208V, 3Ø, 4W: SURFACE MOUNTED
- PANELBOARD: 277/480V, 3Ø, 4W: SURFACE MOUNTED
- DISCONNECT SWITCH: SIZE AND VOLTAGE AS SCHEDULED
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH: SIZE AND VOLTAGE AS SCHEDULED
- T DRY-TYPE XFMR: SIZE AND VOLTAGE AS SCHEDULED
- M MOTORIZED DAMPER
- SITEWORK: UTILITY POLE
- MH SITEWORK: MANHOLE

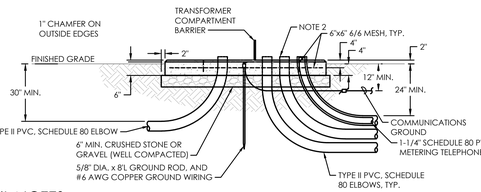
LIGHTING SYMBOLS

- POLE MOUNTED SITE LIGHTING FIXTURE, QUANTITY AND DIRECTION OF HEADS AS INDICATED

MISC. SYMBOLS

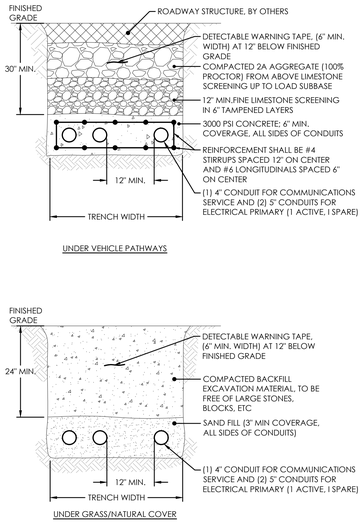
- NEW WORK
- EXISTING WORK
- DEMOLITION WORK
- UNDERGROUND ELECTRICAL PATHWAY
- UNDERGROUND COMMUNICATIONS PATHWAY
- OVERHEAD ELECTRICAL UTILITY LINES
- OVERHEAD COMMUNICATIONS UTILITY LINES
- HOMERUN TO PANELBOARD
- CONDUCTOR; (2) WIRE + GND UNLESS NOTED; REFER TO PANEL SCHEDULES FOR WIRE AND PATHWAY SIZE
- SHORT TICK MARKS INDICATE NUMBER OF PHASE CONDUCTORS, LONG TICK MARKS INDICATE NUMBER OF NEUTRAL CONDUCTORS, REFER TO PANEL SCHEDULES FOR SIZE OF CONDUCTORS, GROUND WIRES, AND CONDUITS.
- A KEYED NOTE
- 1 DEMOLITION KEYED NOTE





DETAIL NOTES:

1. ELECTRICAL CONTRACTOR SHALL CONTACT THE UTILITY COMPANY ON BEHALF OF THE OWNER PRIOR TO BEGINNING WORK TO DISCUSS THE DETAILS OF TRANSFORMER FOUNDATION POSITION AND ORIENTATION, WORKING CLEARANCES, BARRIER PROTECTION, CONSTRUCTION SPECIFICATIONS, AND INSPECTION PROCEDURES. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE TRANSFORMER FOUNDATION. THE CONTRACTOR SHALL PROVIDE A CLEAR AND FIRM APPROACH TO THE TRANSFORMER FOUNDATION AND KEEP THE AREA ABOVE THE TRANSFORMER CLEAR OF OBSTRUCTIONS THAT MAY BLOCK THE USE OF COMPANY VEHICLES (E.G., CRANE ACCESS TO THE TRANSFORMER).
2. SECONDARY CONDUITS SHALL NOT EXTEND EXTEND MORE THAN 2 INCHES ABOVE THE TOP OF FOUNDATION. PRIMARY CONDUITS SHOULD BE CUT OFF 2 INCHES BELOW THE TOP OF FOUNDATION TO ALLOW FOR TERMINATING THE CABLES.
3. INSTALL ALL CONDUITS BEFORE PLACING PAD. CONDUITS SHOULD NOT BE PLACED UNDER SECTIONS OF PAD SUPPORTING TRANSFORMER SO THAT ORIGINAL GROUND WILL NOT BE DISTURBED.
4. BACKFILL SHALL BE CLEAN GRANULAR SOIL, FREE OF LARGE STONES AND PERISHABLE MATERIAL. ALL BACKFILL SHALL BE SPREAD AND COMPACTED IN MAXIMUM LAYERS OF 8 INCHES.
5. THOROUGHLY COMPACT BASE CRUSHED STONE OR GRAVEL.
6. CONCRETE PAD MAY BE POURED-IN-PLACE OR MAY BE PRECAST (4000 MIN. PSI CONCRETE).
7. TO PREVENT WATER MIGRATION FROM CONCRETE WHEN POURING, PLACE WATERPROOF MEMBRANE ON CRUSHED STONE OR GRAVEL BEFORE POURING CONCRETE.
8. REINFORCING WIRE MESH SHALL CONFORM TO ASTM DESIGNATION A185.
9. CEMENT TO BE 1 OR 1-A AND MEETING ASTM DESIGNATIONS C-150 AND C-175 RESPECTIVELY.
10. POURED PAD CONCRETE TO DEVELOP MINIMUM 4000 PSI AT 28 DAYS AGE, CONTAIN MINIMUM OF 5.5 BAGS OF CEMENT PER CUBIC YARD AND MAXIMUM OF 6 GALLONS OF WATER PER 94-POUND BAG OF CEMENT, AND CONFORM TO ASTM DESIGNATION C-94. FOURTEEN (14) DAYS MINIMUM DRYING TIME BEFORE TRANSFORMER IS SET.
11. SEAL ALL OPENINGS AROUND CONDUITS WITH GROUT; CAP ALL SPARE CONDUITS TO PREVENT ENTRY OF RODENTS AND ANIMALS INTO TRANSFORMER COMPARTMENT.
12. IF CONDUIT EXTENDS INTO BUILDING, IT SHALL BE SEALED (PER NEC) AT BUILDING END TO PREVENT GAS FROM ENTERING BUILDING THROUGH THE CONDUIT.
13. COMMUNICATION GROUND – THE NESC REQUIRES BONDING OF ALL COMMUNICATIONS EQUIPMENT (TELEPHONE, CATV, ETC.) THAT ARE WITHIN SIX (6) FEET OF THE PAD-MOUNTED TRANSFORMER. THE WIRE FOR BONDING COMMUNICATIONS EQUIPMENT SHALL BE MINIMUM #6 AWG SOLID COPPER WIRE THAT IS ATTACHED DIRECTLY TO GROUND ROD, RUNS UNDERNEATH THE CONCRETE PAD, EXTENDS 12 INCHES BEYOND THE EDGE OF THE PAD, AND FINALLY RUNS ALONGSIDE THE PAD FOUNDATION . THE REQUIRED MINIMUM LENGTH OF WIRE IS 8-1/2 FEET.
14. IN AREAS WHERE SETTLING MAY OCCUR, INSTALL THREE (3) CONCRETE PIERS, 8-INCH MINIMUM DIAMETER, 36 INCHES DEEP, IN A TRIANGULAR CONFIGURATION UNDER FOUNDATION. ELECTRICAL CONTRACTOR SHALL CONTACT THE COMPANY FOR DETAILS.



2 E500 UTILITY DUCTBANK
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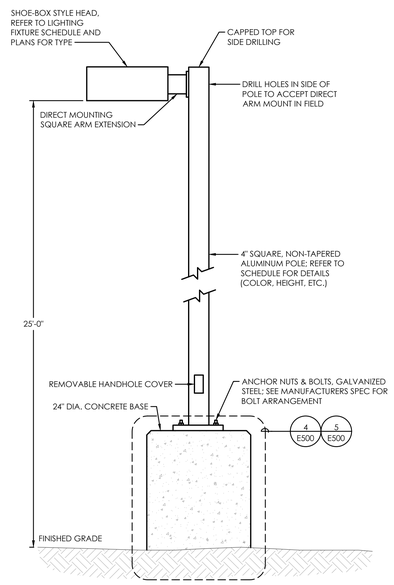

3 E500 POLE MOUNTED LUMINAIRE DETAIL (PL1 & PL2)
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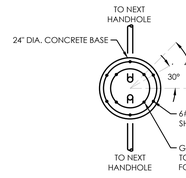

4 E500 POLE MOUNTED LUMINAIRE BASE DETAIL (PL1 & PL2) - PLAN
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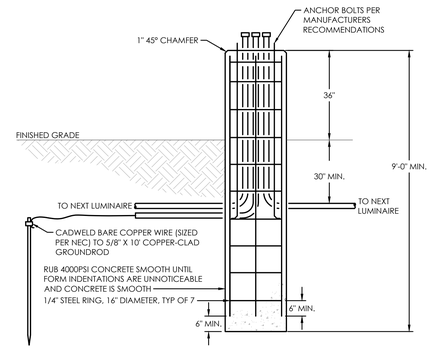

5 E500 POLE MOUNTED LUMINAIRE BASE DETAIL (PL1 & PL2) - ELEVATION
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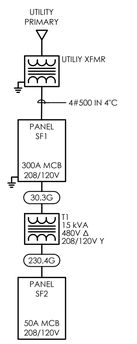

6 E500 ONE-LINE DIAGRAM
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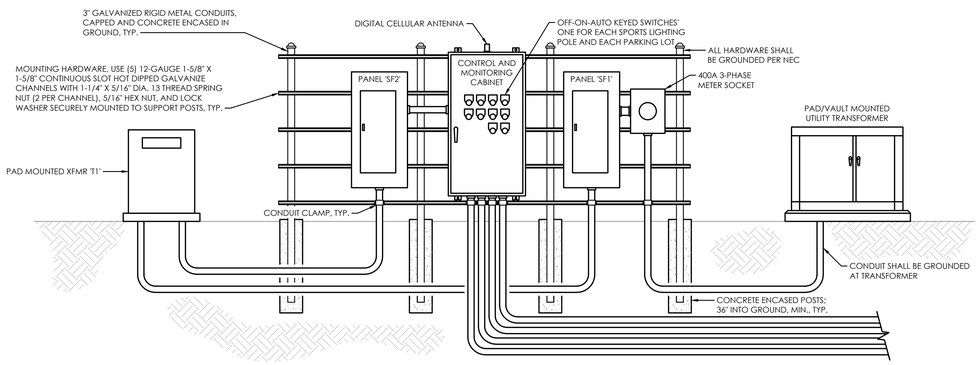

8 E500 SOCCER FIELD ELECTRICAL SERVICE ELEVATION
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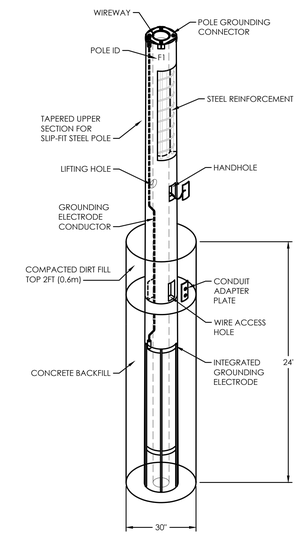

9 E500 PRECAST CONCRETE BASE
SCALE: NOT TO SCALE

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SSE PROJECT No: 16-248

DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2
11/14/19	TWP. SUBMISSION 3

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
DETAILS - ELECTRICAL

E500