

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.
 OWNER _____ BY _____
 WITNESS MY HAND AND SEAL, THIS DATE _____
 NOTARY PUBLIC _____

TOWNSHIP PLANNING COMMISSION
 FERGUSON TOWNSHIP PLANNING COMMISSION APPROVED
 CHAIRMAN _____ DATE _____
 SECRETARY _____ DATE _____

TOWNSHIP SUPERVISORS
 FERGUSON TOWNSHIP SUPERVISORS APPROVED
 CHAIRMAN _____ DATE _____
 SECRETARY _____ DATE _____

STORMWATER FACILITIES ACKNOWLEDGMENT
 I / WE _____, THE LANDOWNER(S) MY/OUR HEIRS AND ASSIGNS, ACKNOWLEDGE THE STORMWATER MANAGEMENT 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 MANAGEMENT SYSTEM IS MAINTAINED IN ACCORDANCE WITH THE RECORDED STORMWATER MANAGEMENT OWNERSHIP AND MAINTENANCE AGREEMENT (RB _____ PG. _____).
 OWNER _____ BY _____

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

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

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.
 DESIGN ENGINEER _____

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 _____

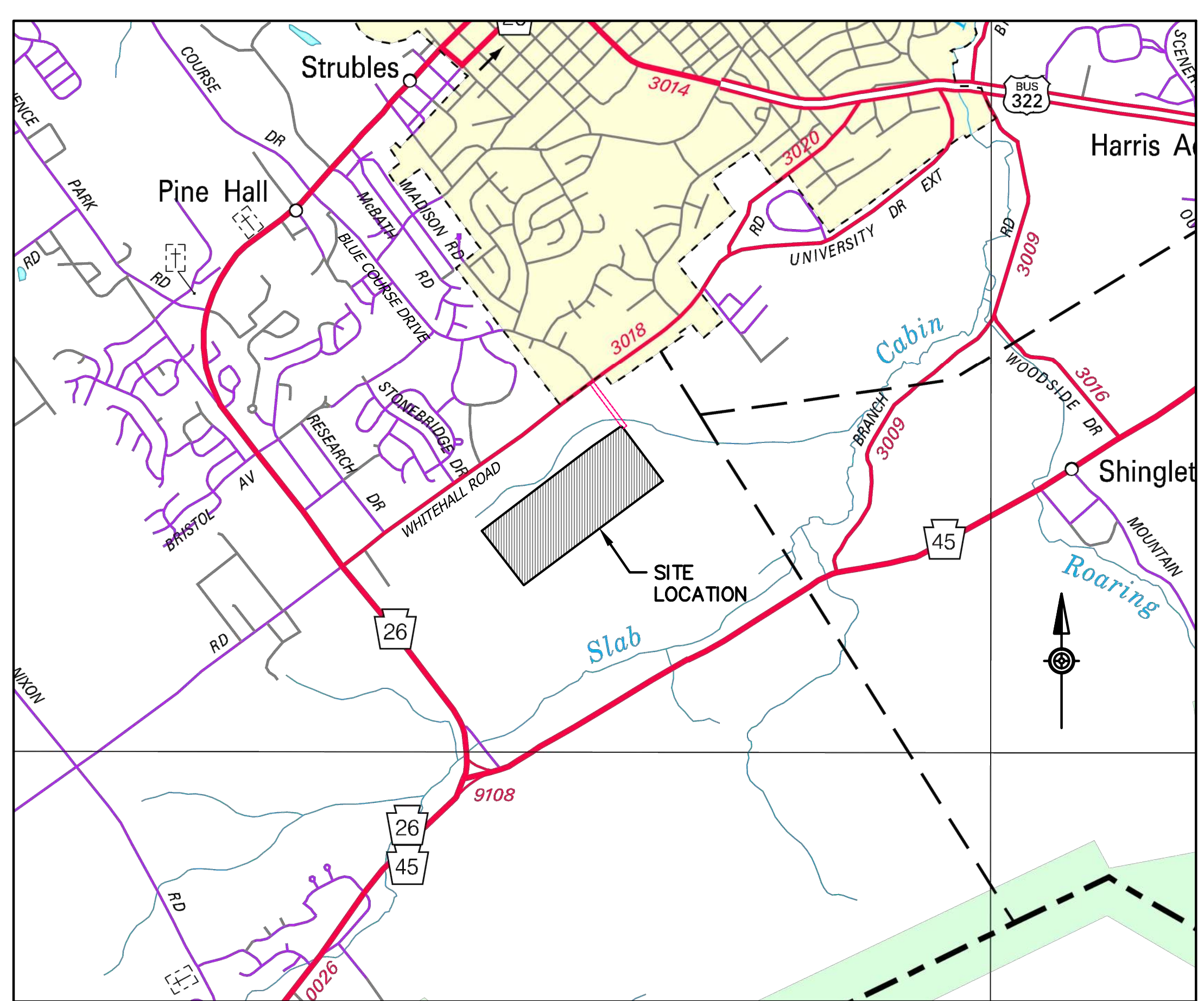
RECORDER OF DEEDS
 RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS, CENTRE COUNTY, PENNSYLVANIA, IN PLAN BOOK _____, PAGE _____, THIS THE _____ DAY OF _____, 20____.
 RECORDER OF DEEDS _____

ZONING APPLICATION DATE
 ZONING APPLICATION DATE FOR THIS LAND DEVELOPMENT PLAN:
 DATE OF APPLICATION _____

RECORD PLAN
 THIS 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 403.0)

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 MUSSEY GAP TRAIL NETWORK. FUTURE PHASES FOR WHITEHALL ROAD REGIONAL PARK WILL REQUIRE SUBSEQUENT LAND DEVELOPMENT REVIEW AND APPROVAL BY FERGUSON TOWNSHIP.

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



SITE INFORMATION
 SCALE: 1"=2000'
 0 2000 4000 FEET

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- DB 2143 PG 30
 - E. DEED REFERENCE: RA - RURAL AGRICULTURAL
 - F. ZONING: FOLLOW FARMLAND
 - G. SITE USE EXISTING: REGIONAL PLACE OF ASSEMBLY - REGIONAL PARKLANDS
 - H. SITE USE PROPOSED: PRIMARY USE: REGIONAL PARKLANDS 100.00 ACRES (4,356,009 SF)
 - I. PROPERTY SIZE: EXISTING: (FARMLAND): FRONT: 50' SIDE: 100' REAR: 75' PROPOSED: (REGIONAL PLACE OF ASSEMBLY): FRONT: 20' SIDE: 30' REAR: 50'
 - 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

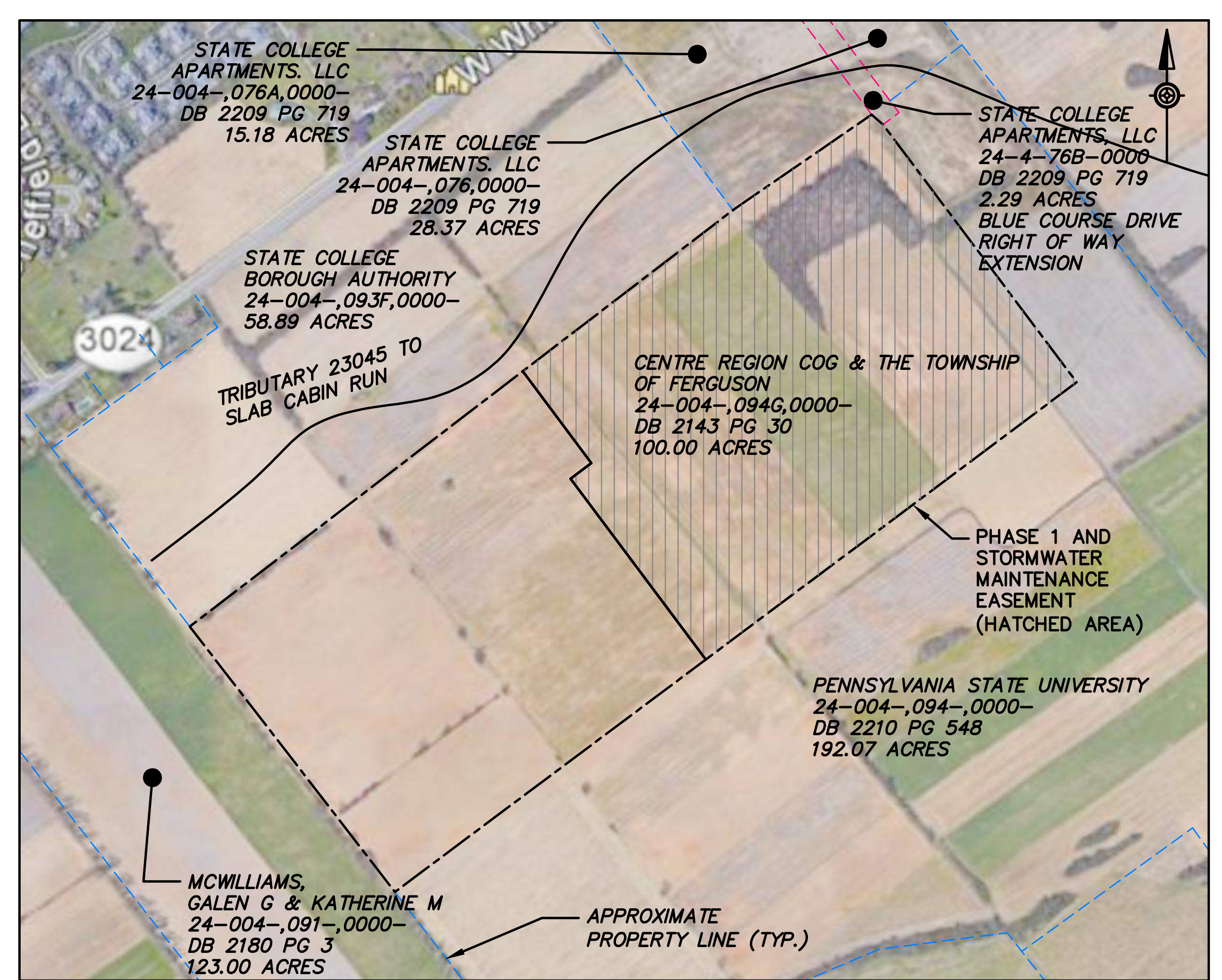
3. SOILS INFORMATION
 - HoB - HAGERSTOWN SILT LOAM
 - HcB - HAGERSTOWN SILTY CLAY LOAM
 - HuB - HUBLERSBURG SILT LOAM
 - OhB - OPEQUON-HAGERSTOWN COMPLEX

- 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
 - * C105 - SITE SECTIONS
 - 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
 - C107.1 - SITE CONSTRUCTION DETAILS
 - C107.2 - SITE CONSTRUCTION DETAILS
 - C107.3 - SITE UTILITY DETAILS
 - C107.4 - SITE UTILITY DETAILS
 - C107.5 - POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
 - C107.6 - POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
 - C107.7 - POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
 - C107.8 - EROSION AND SEDIMENTATION CONTROL DETAILS
 - C107.9 - 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.
- 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 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.
- 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 PLACE 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.
- 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 EXTENSION 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: FALL 2019), 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, NORTING: 216838.3402, EASTING: 1935739.5284, ELEVATION: 1094.6098



SITE KEY MAP
 SCALE: 1"=400'
 0 400 800 FEET

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

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 F1
 State College, PA 16801
 Phone: (814) 231-3071
 Fax: (814) 235-7832
 www.crrp.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: 814-234-6506
 F: 814-234-0256
 e: fhaia@aol.com

PENCO ENGINEERING
 MECHANICAL & ELECTRICAL CONSULTANTS
 274 WEST COLLEGE AVENUE PROJECT NO. E2808
 STATE COLLEGE, PA 16801 © 2018 PENCO ENGINEERING, LLC
 814-234-7066

BSA/LLA
 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

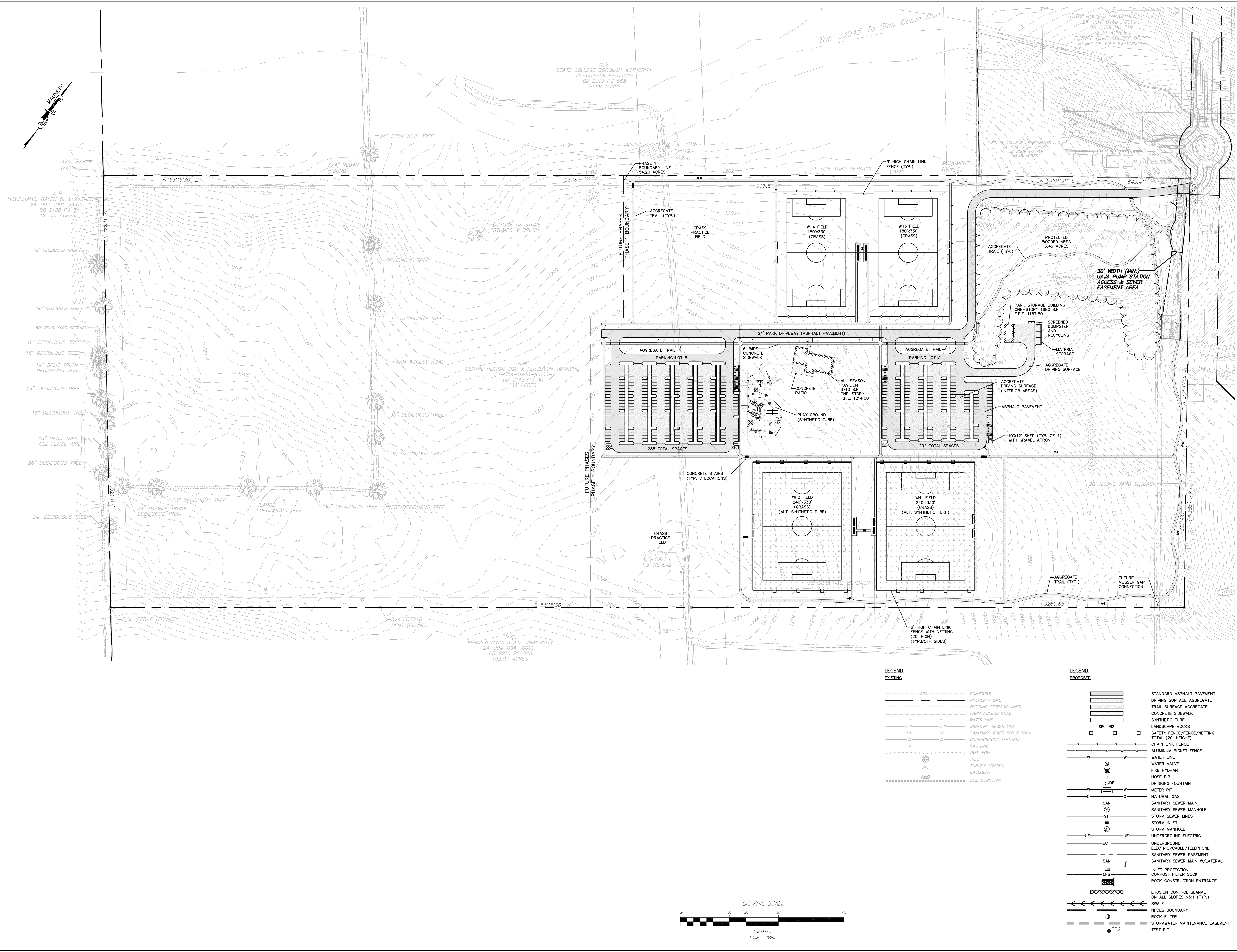
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06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

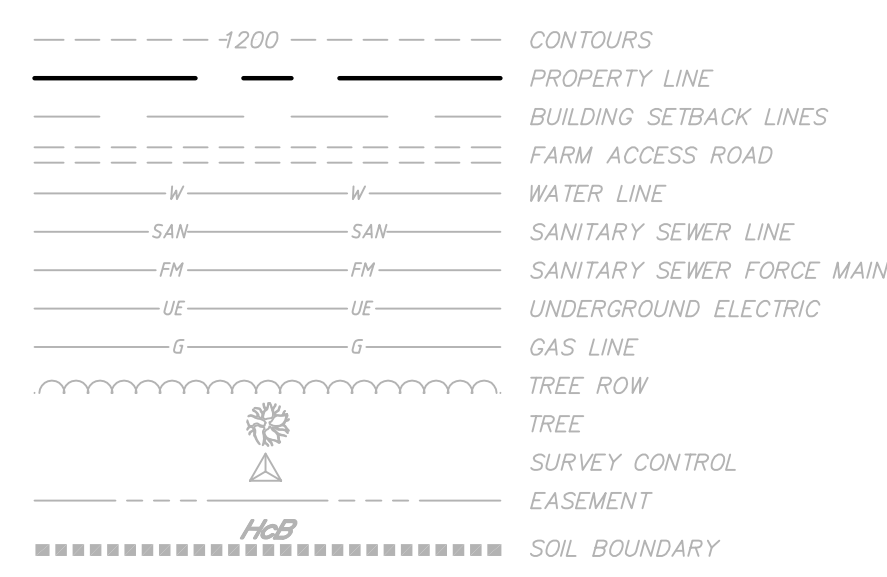
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CONSTRUCTION>

**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

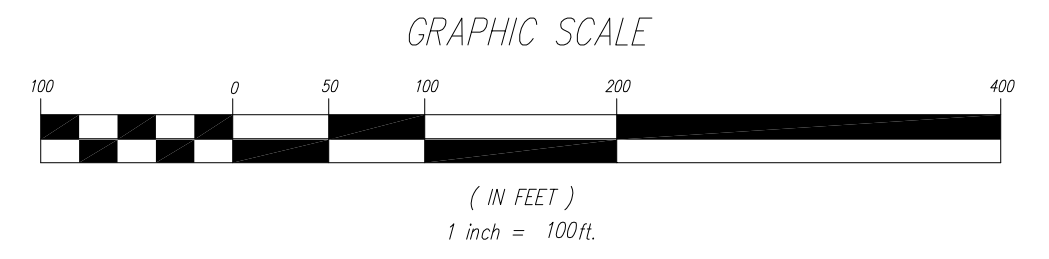
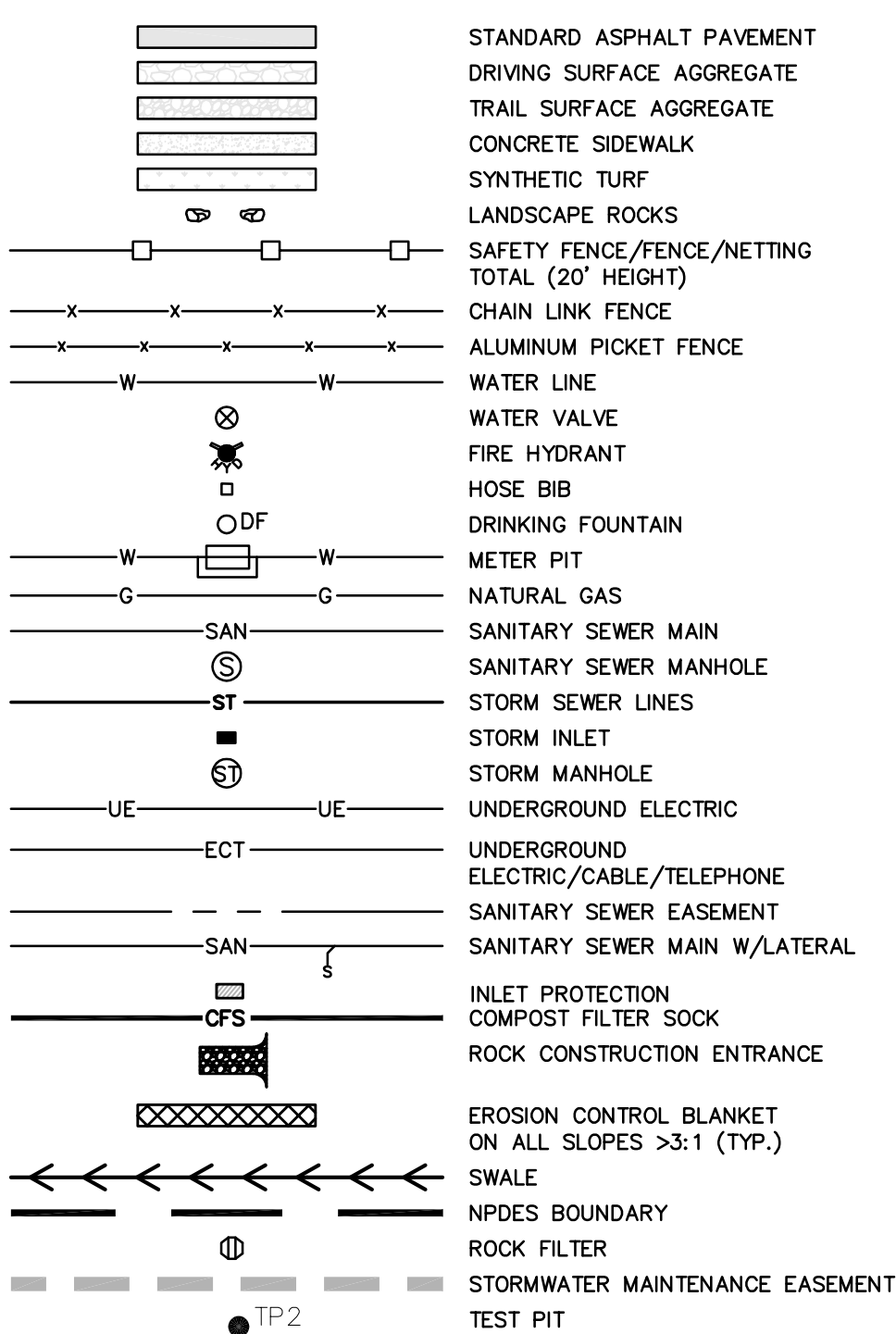
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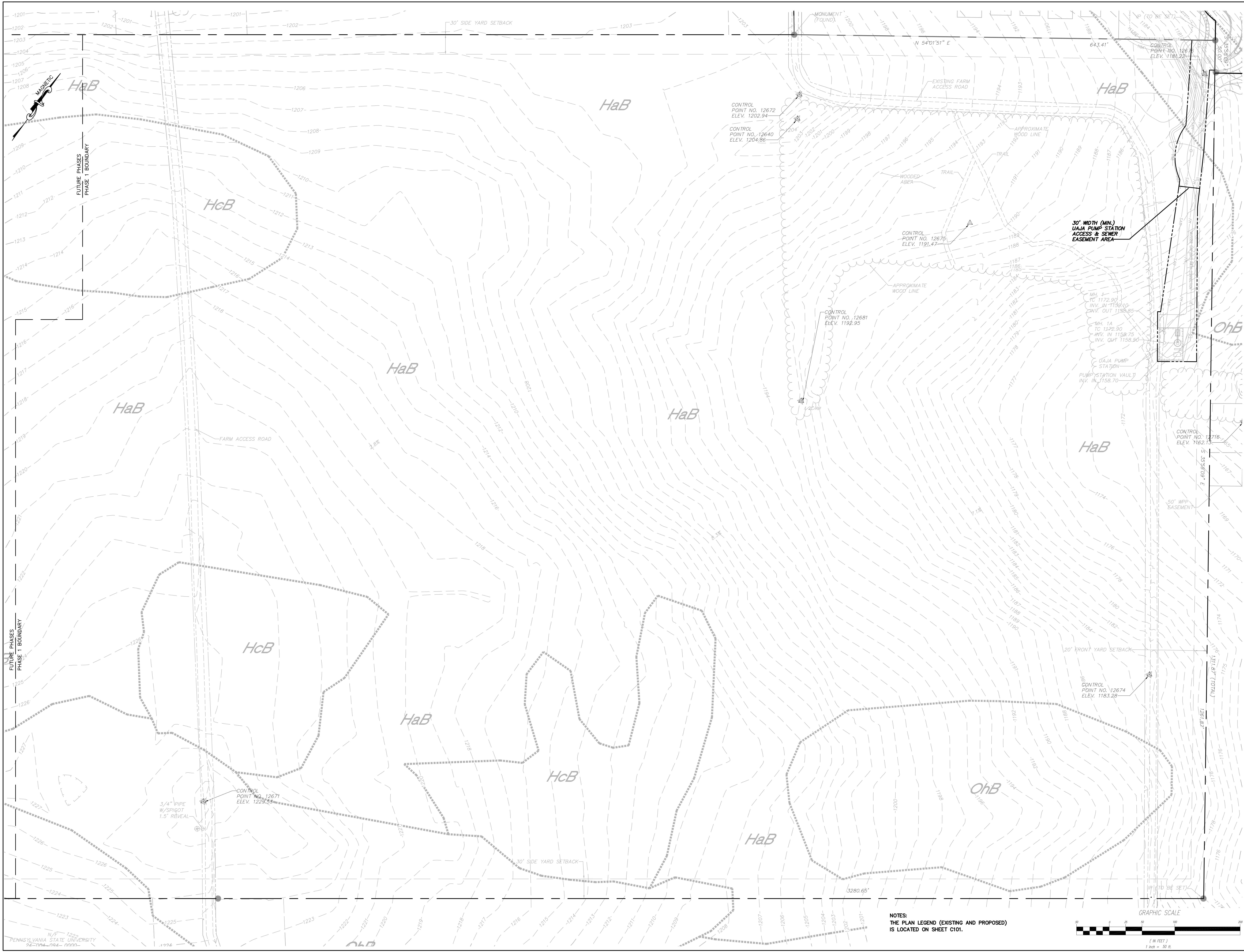


**LEGEND
 EXISTING**



**LEGEND
 PROPOSED**





REVISIONS	
SYM	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

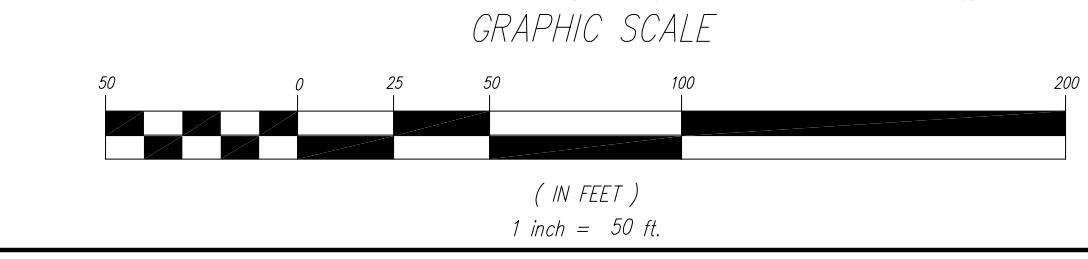
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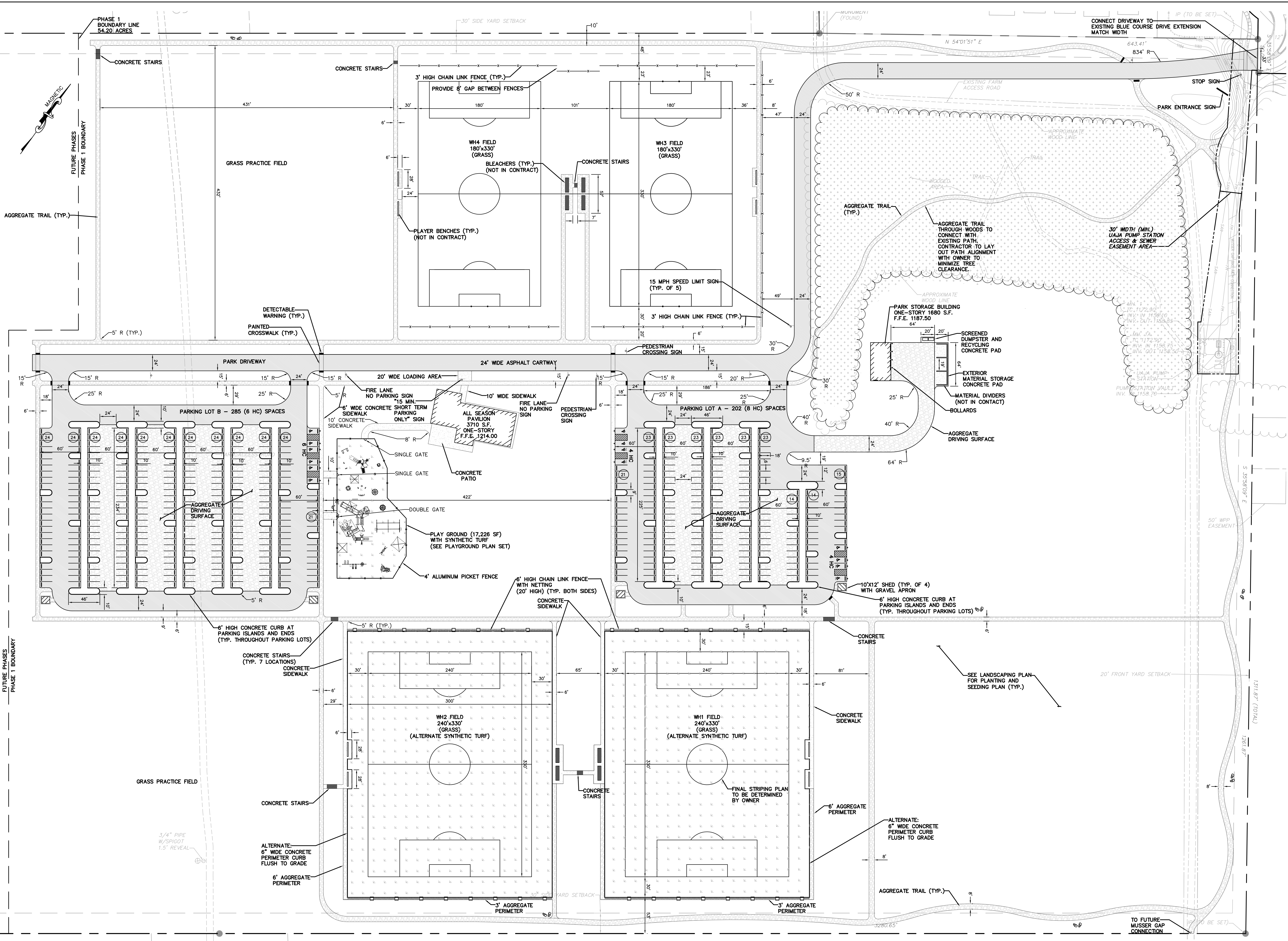
SHEET NAME
EXISTING CONDITIONS

NOTES:

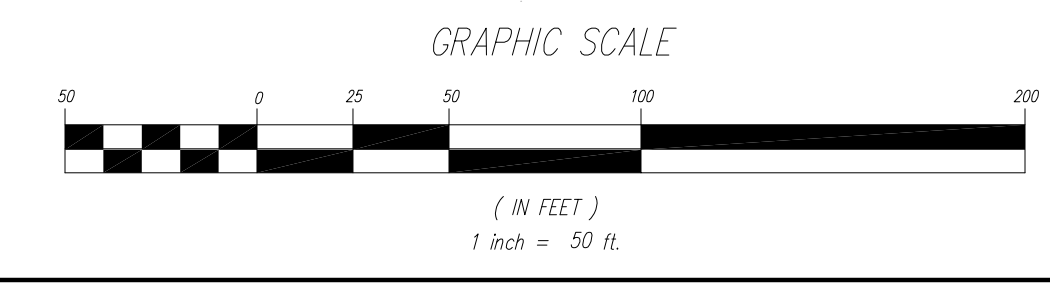
 THE PLAN LEGEND (EXISTING AND PROPOSED)

 IS LOCATED ON SHEET C101.





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



REVISIONS	
SYM	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

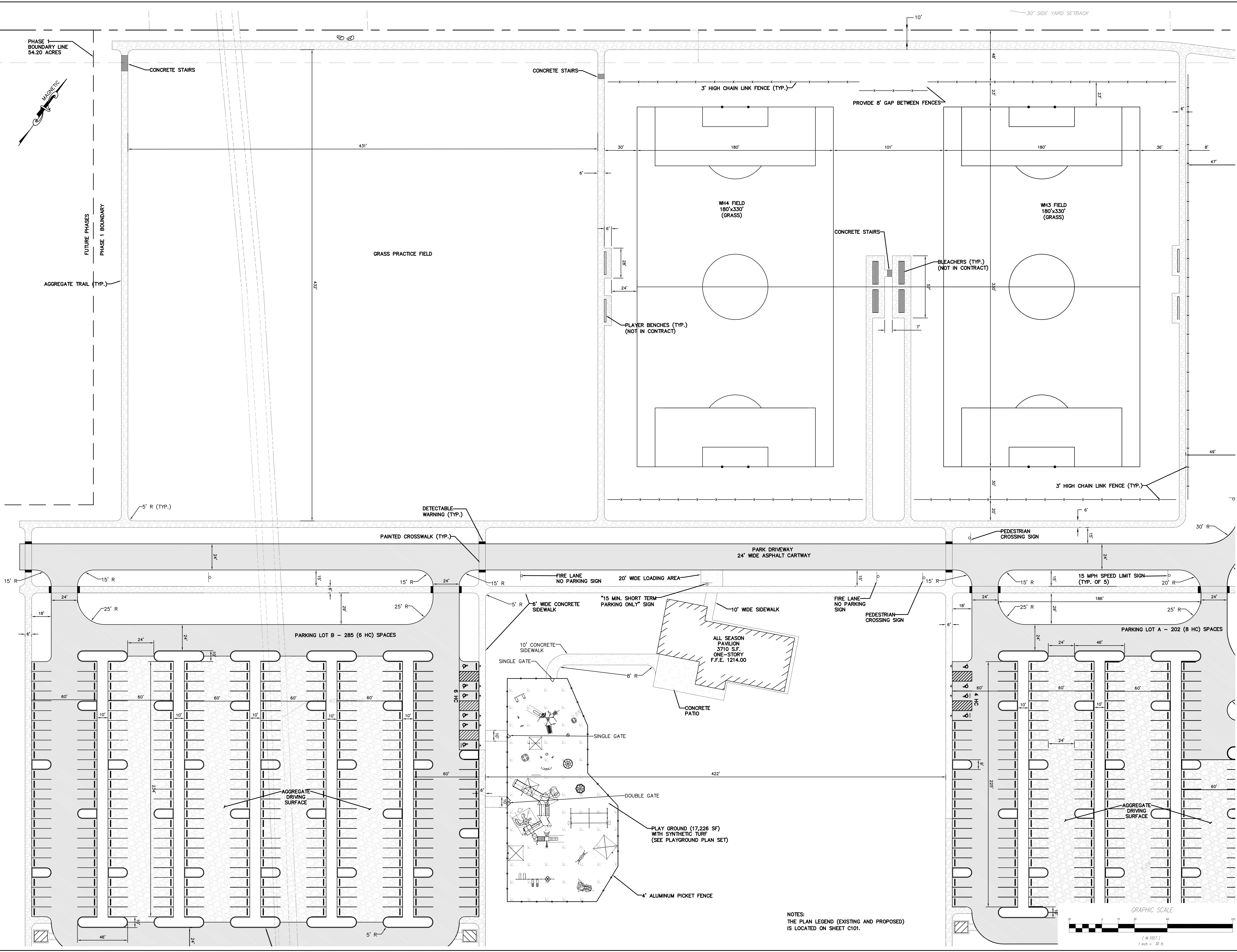
WHITEHALL ROAD REGIONAL PARK PHASE 1

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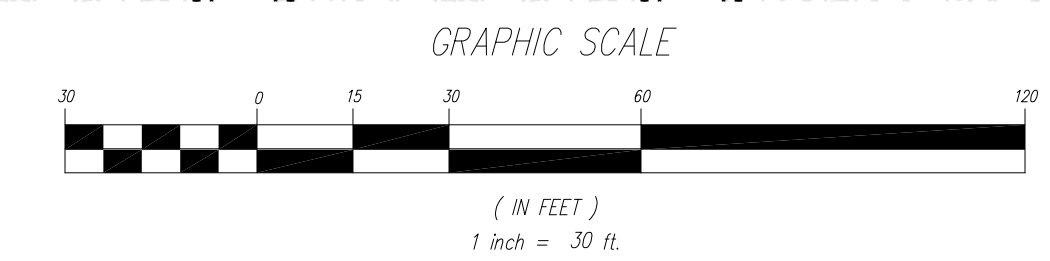
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**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

<PRELIMINARY
NOT FOR
CONSTRUCTION>



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



REVISIONS		
SYM	DATE	DESCRIPTION

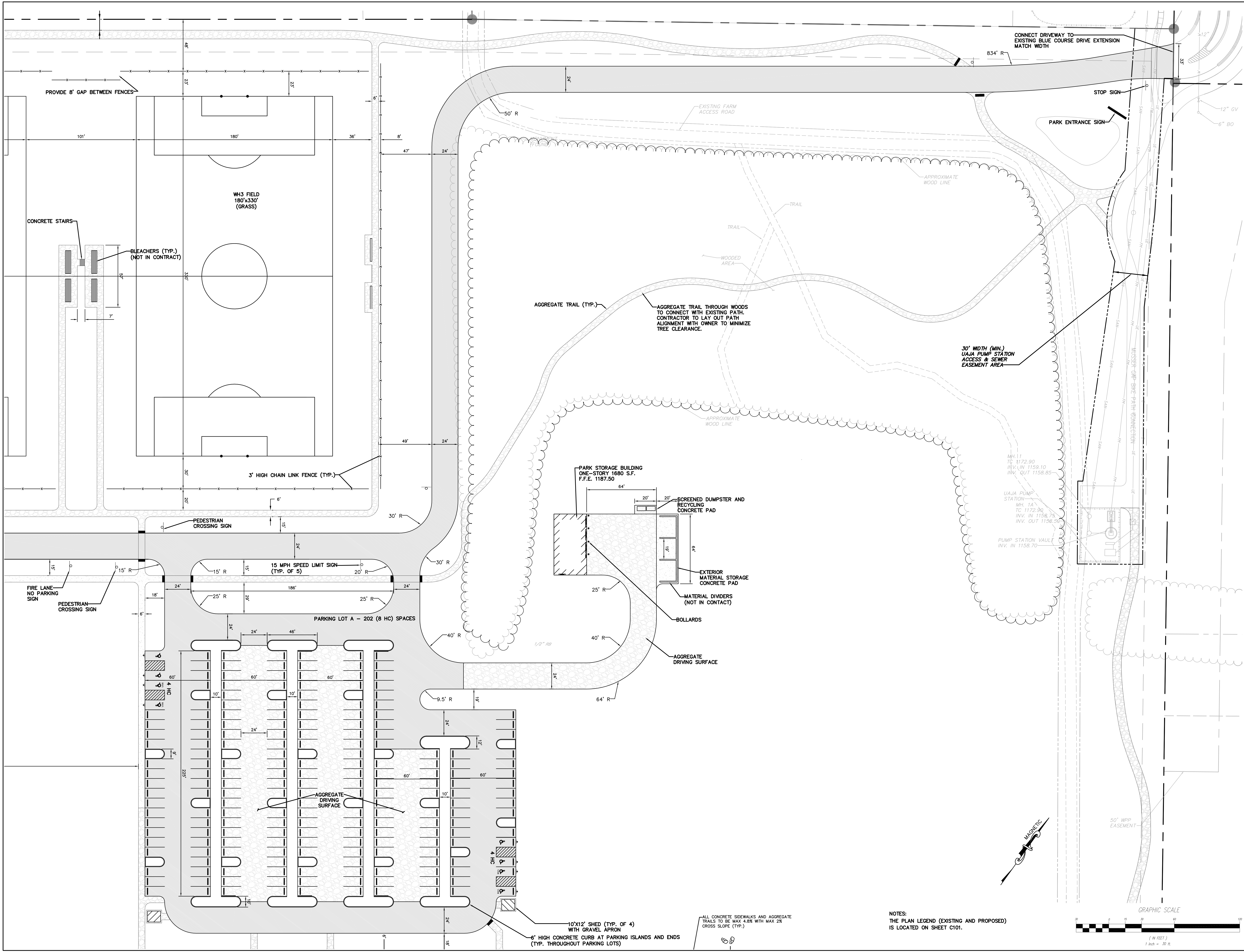
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

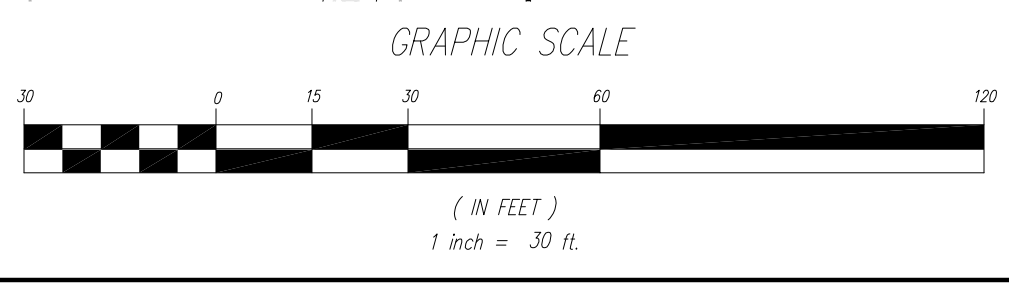
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 NOT FOR
 CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.2



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



ALL CONCRETE SIDEWALKS AND AGGREGATE
 TRAILS TO BE MAX 4.5% WITH MAX 2%
 CROSS SLOPE (TYP.)

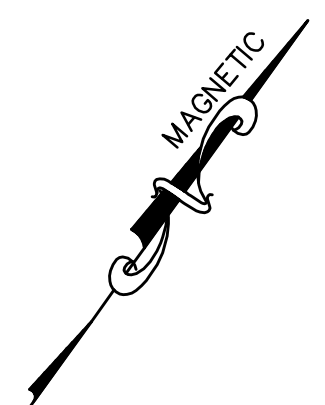
10'X12' SHED (TYP. OF 4)
 WITH GRAVEL APRON
 6' HIGH CONCRETE CURB AT PARKING ISLANDS AND ENDS
 (TYP. THROUGHOUT PARKING LOTS)

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

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

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

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



REVISIONS		
SYM	DATE	DESCRIPTION

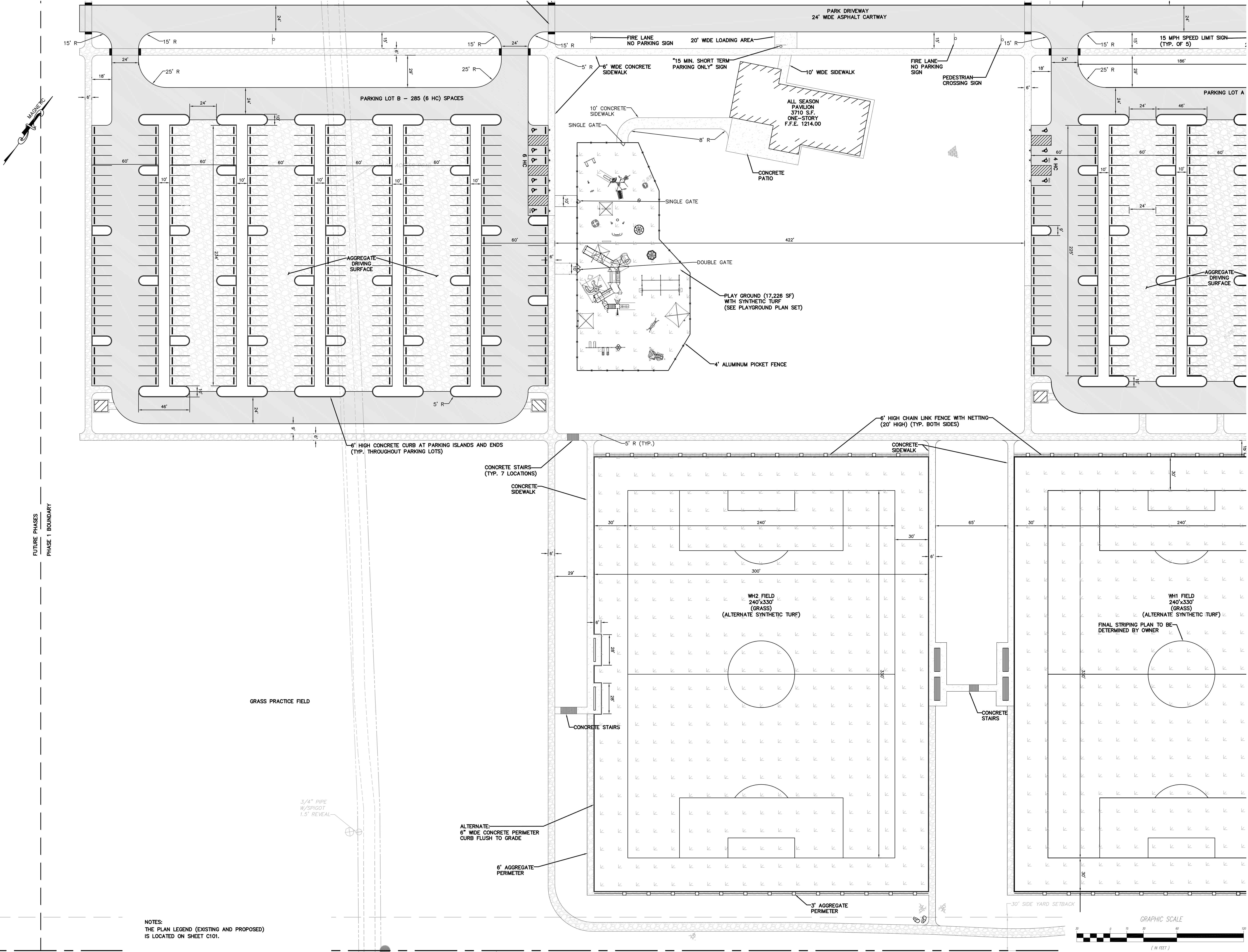
SUBMISSIONS		
DATE	DESCRIPTION	TWP. SUBMISSION
06/07/19	TWP. SUBMISSION 1	1
10/02/19	TWP. SUBMISSION 2	2

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

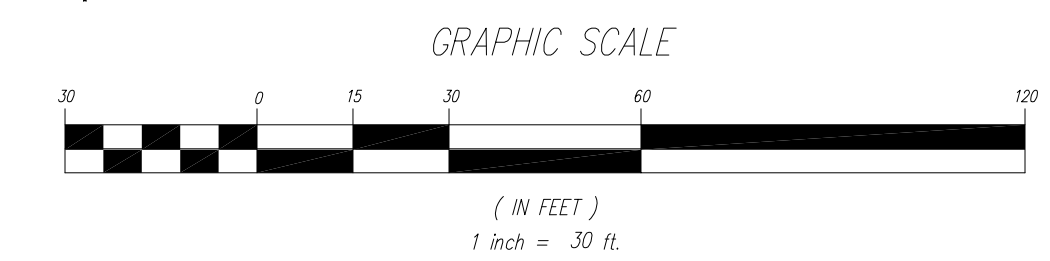
<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.3



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



FUTURE PHASES
PHASE 1 BOUNDARY

REVISIONS		
SYM	DATE	DESCRIPTION

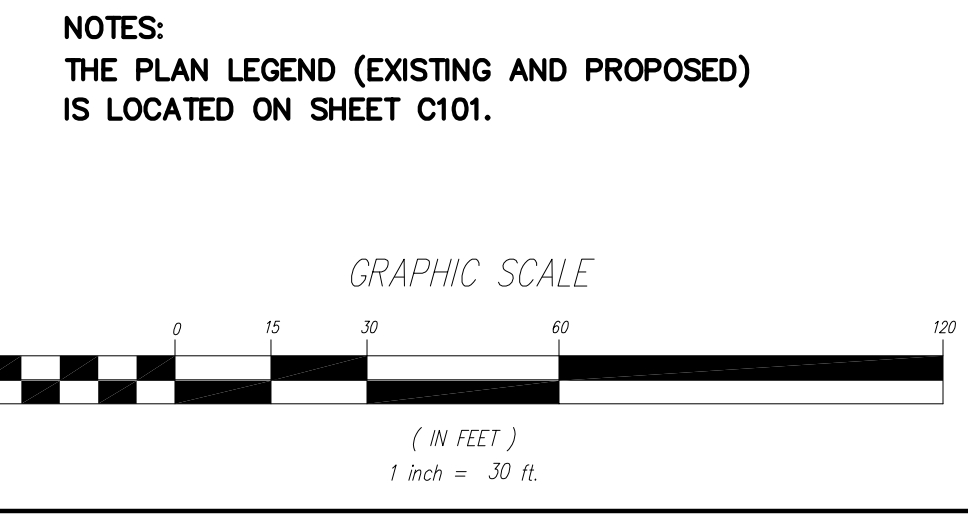
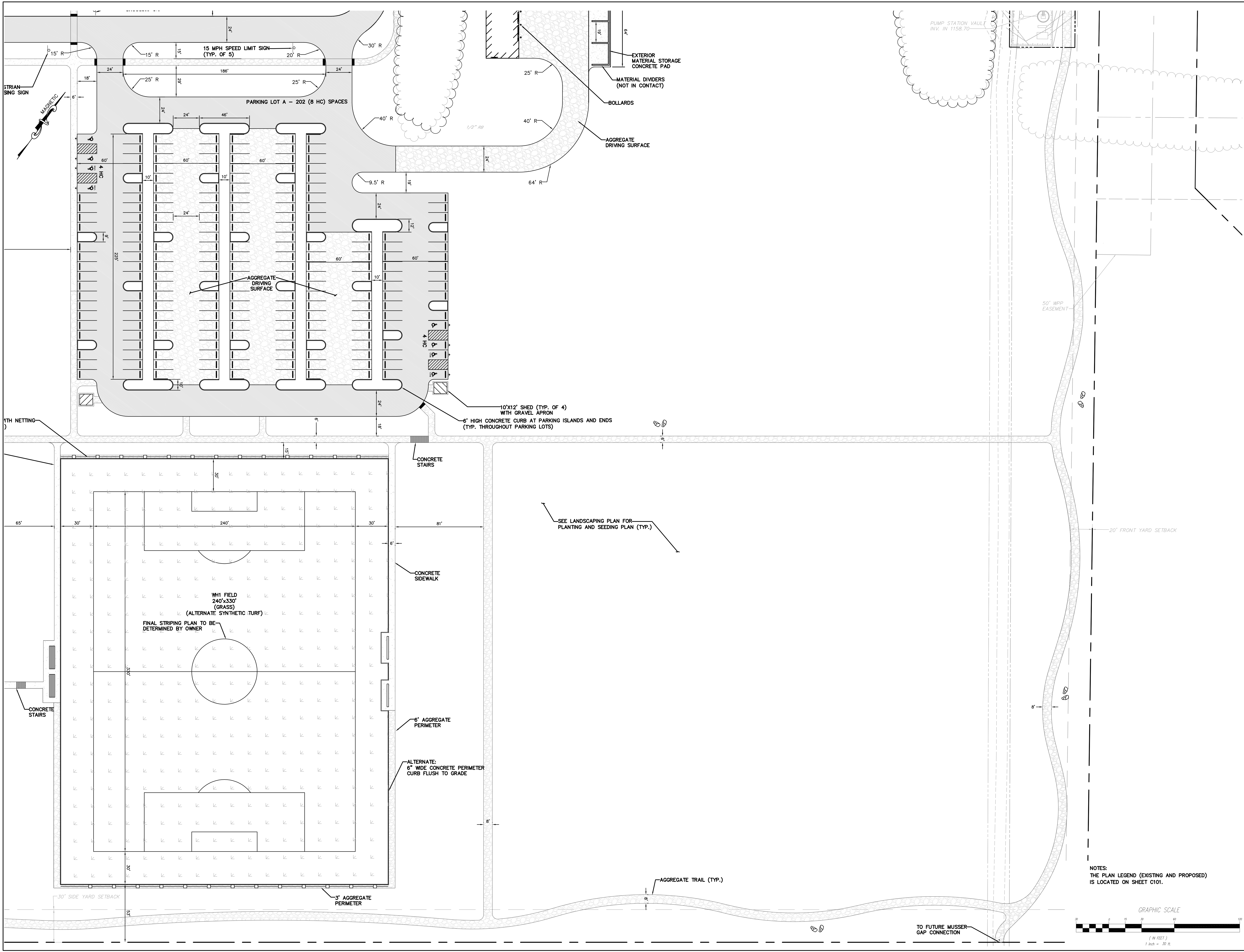
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

<PRELIMINARY
 NOT FOR
 CONSTRUCTION>

SHEET NAME
SITE PLAN

C103.4



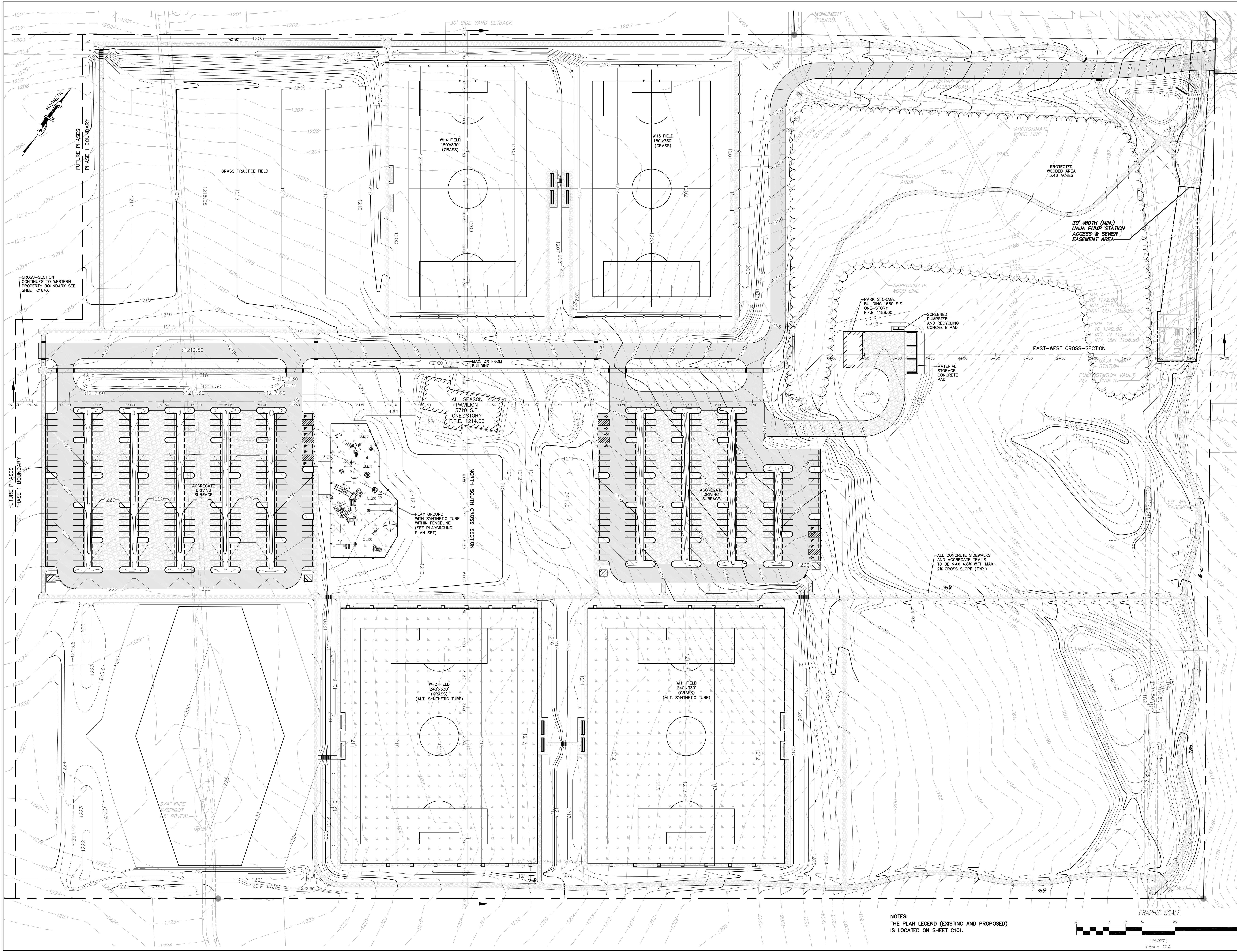
TO FUTURE MUSSER-
 GAP CONNECTION

REVISIONS	
SYM	DESCRIPTION

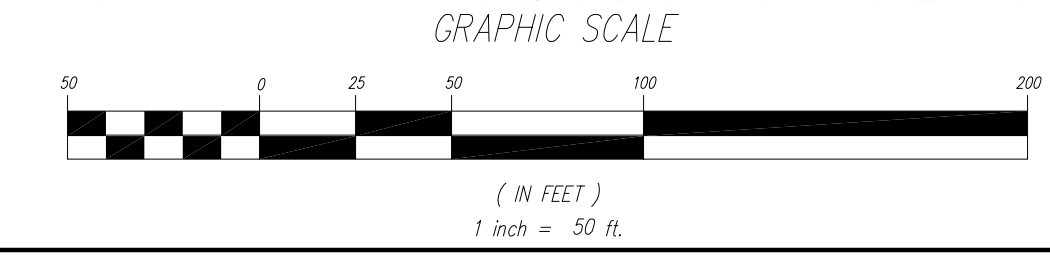
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

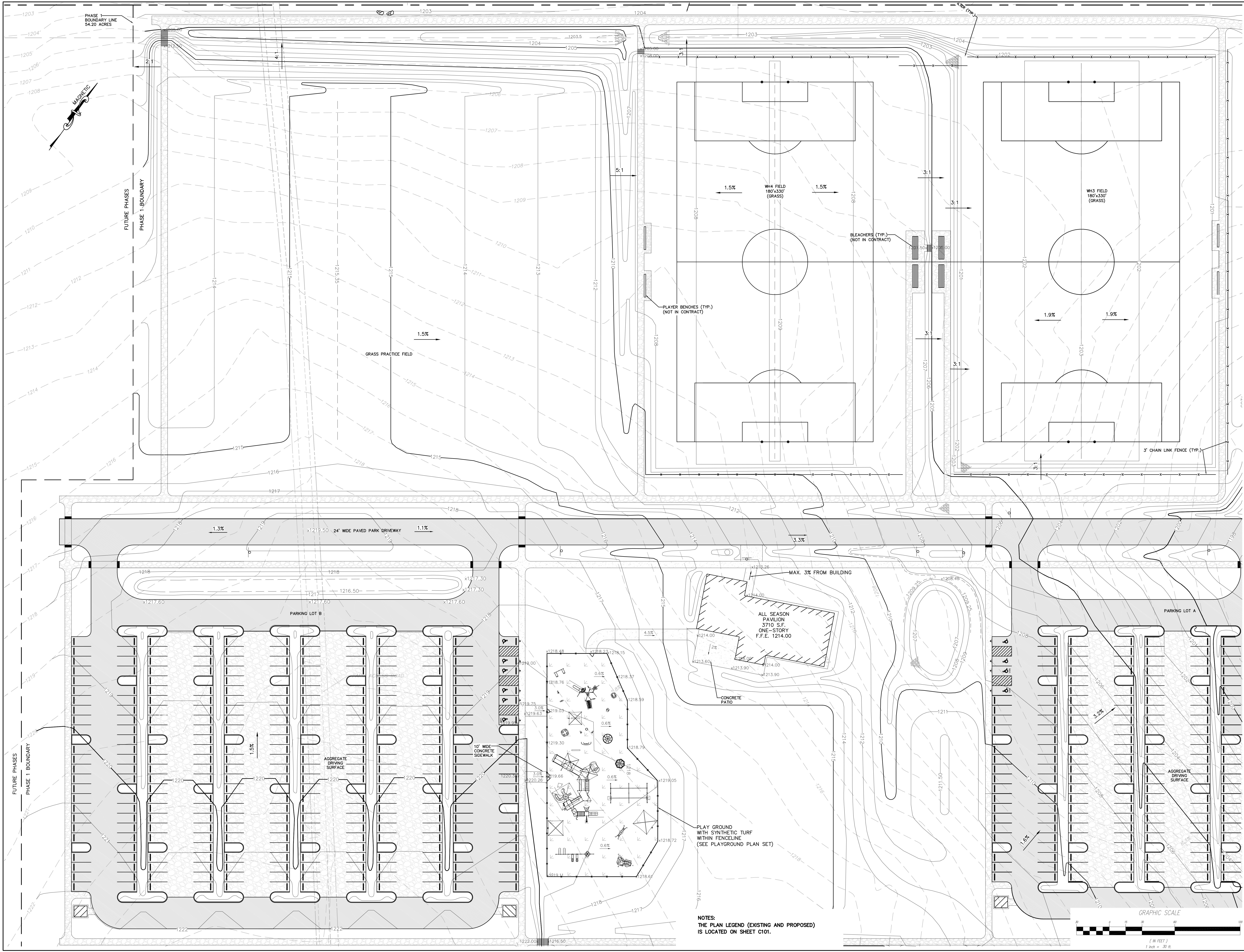
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



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





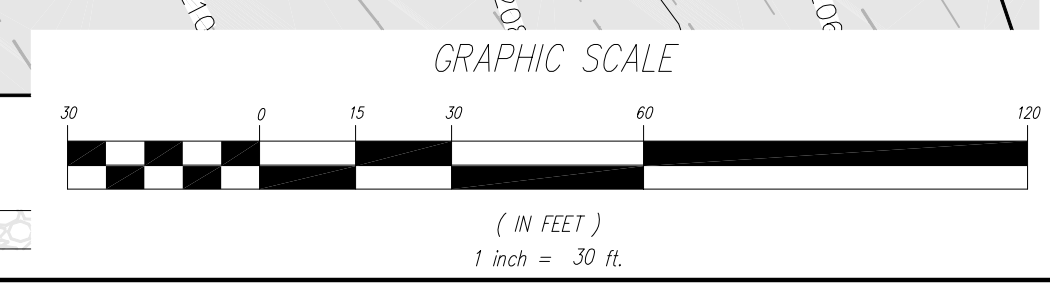
REVISIONS		
SYM	DATE	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

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

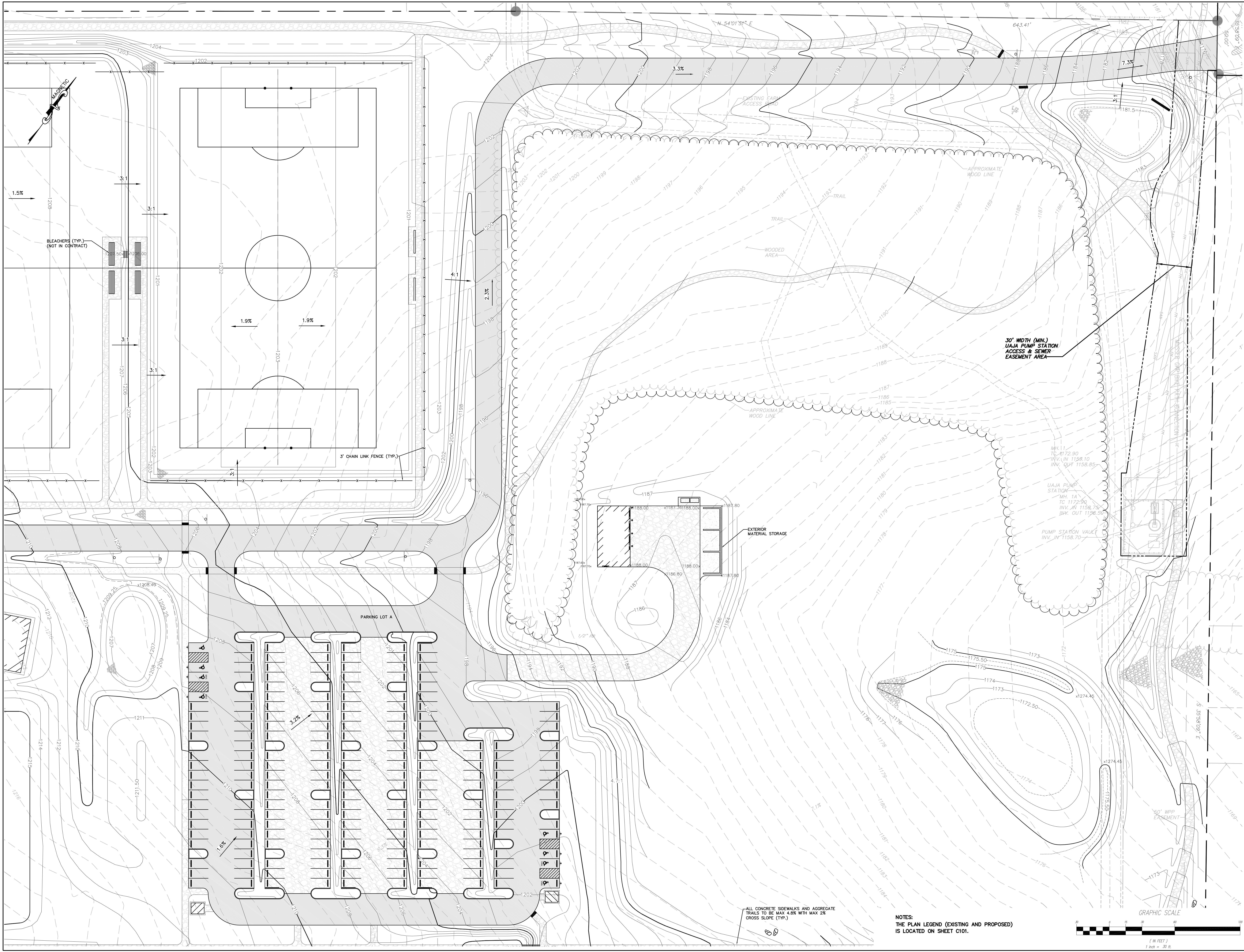


REVISIONS		
SYM	DATE	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

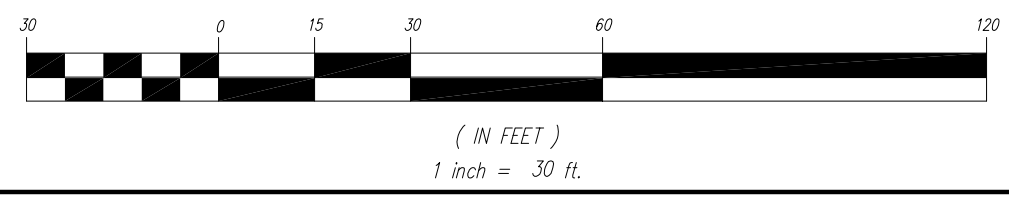
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



ALL CONCRETE SIDEWALKS AND AGGREGATE TRAILS TO BE MAX. 4.0% WITH MAX. 2% CROSS SLOPE (TYP.)

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



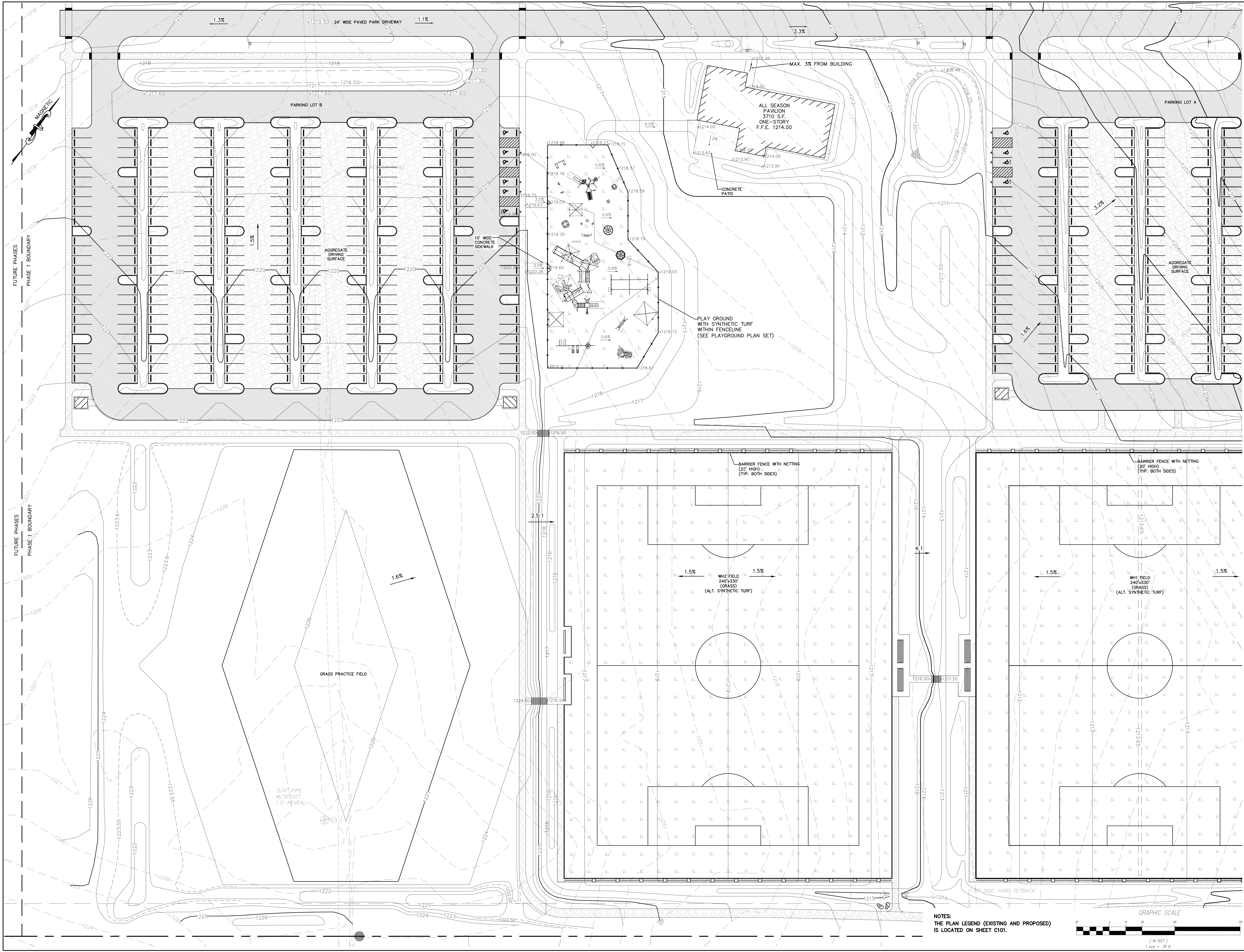
SYM	DATE	DESCRIPTION

SUBMISSIONS

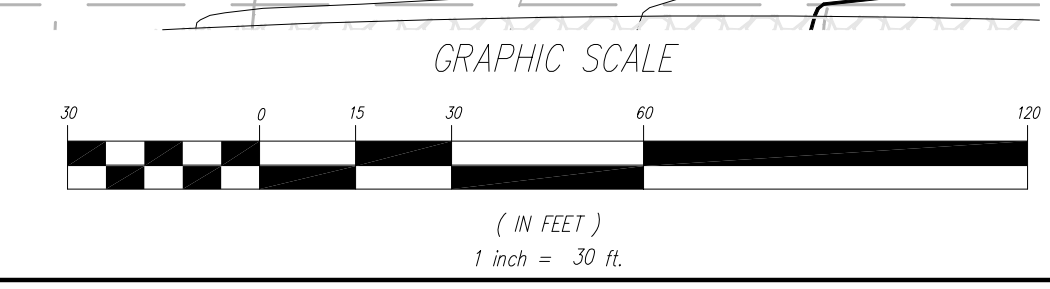
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

<PRELIMINARY
NOT FOR
CONSTRUCTION>



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

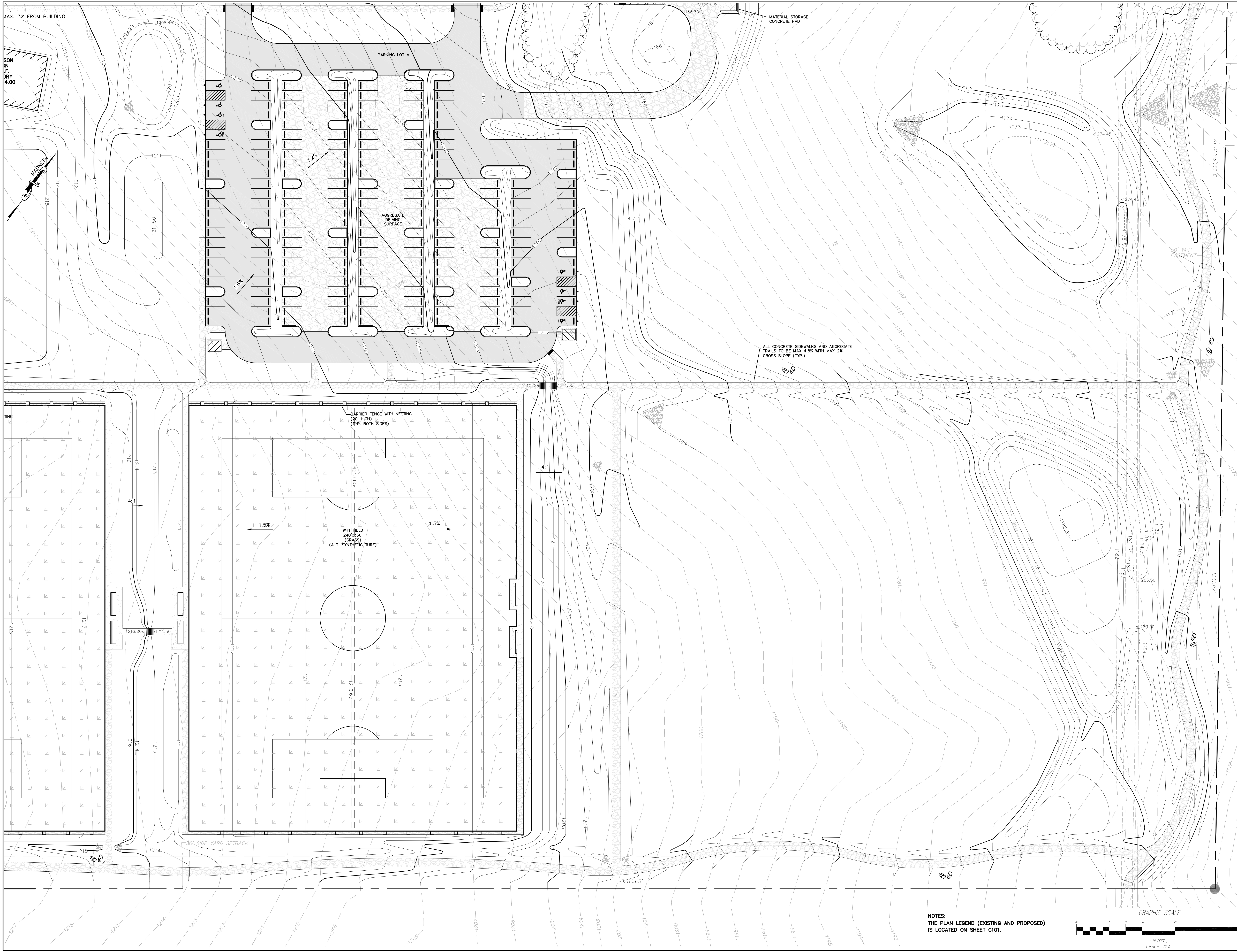


REVISIONS		
SYM	DATE	DESCRIPTION

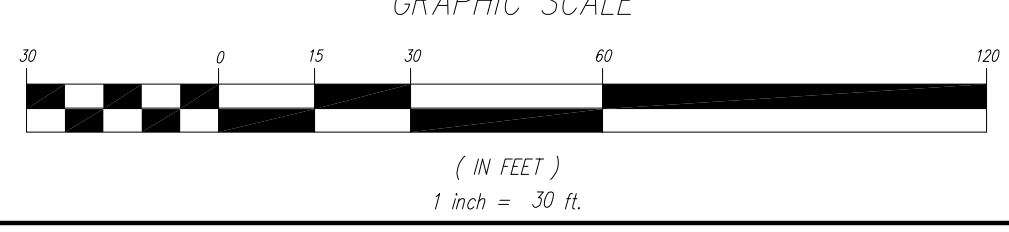
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY
NOT FOR
CONSTRUCTION>



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



REVISIONS		
SYM	DATE	DESCRIPTION

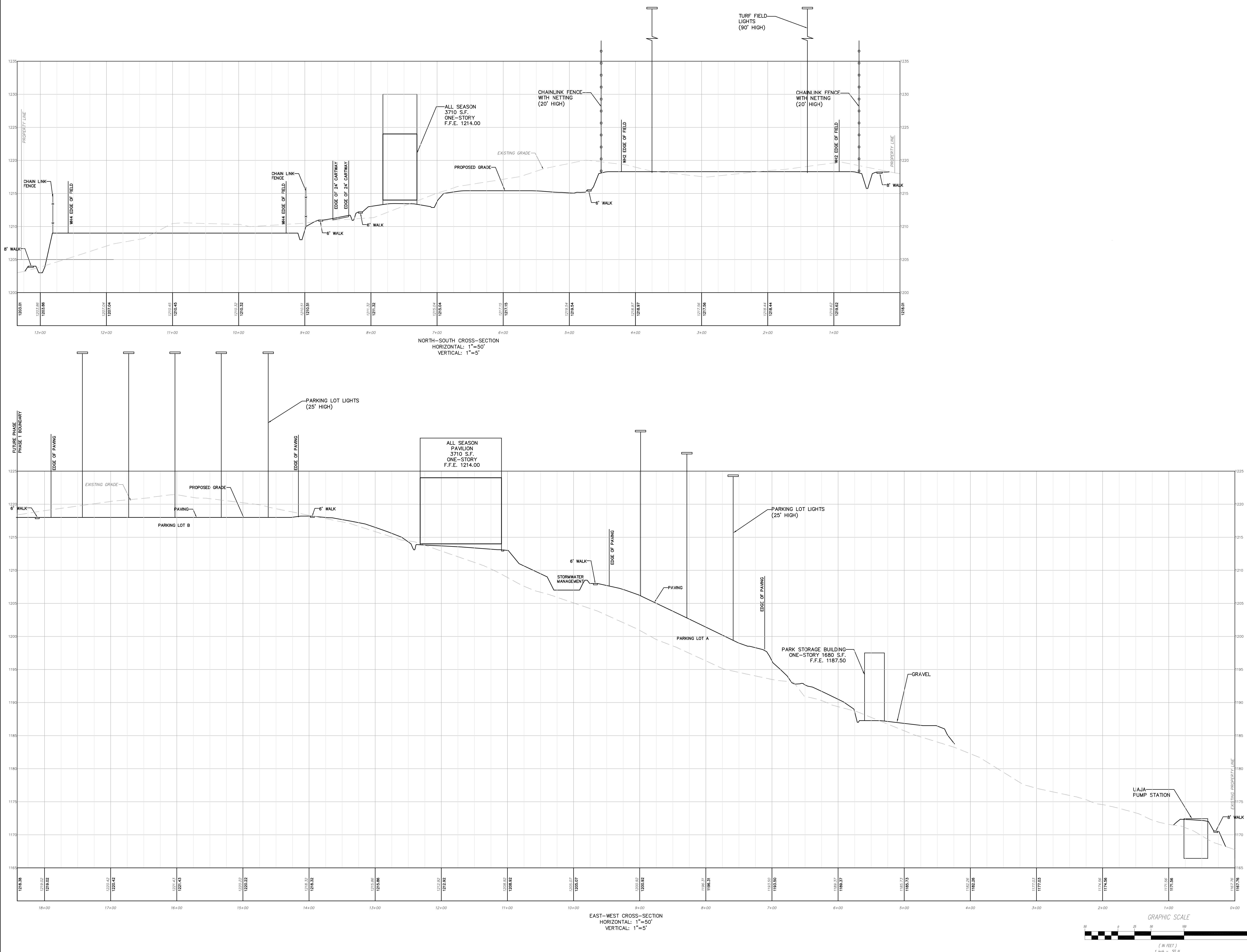
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
SITE CROSS SECTIONS

C104.5



REVISIONS		
SYM	DATE	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL

ROAD

REGIONAL

PARK

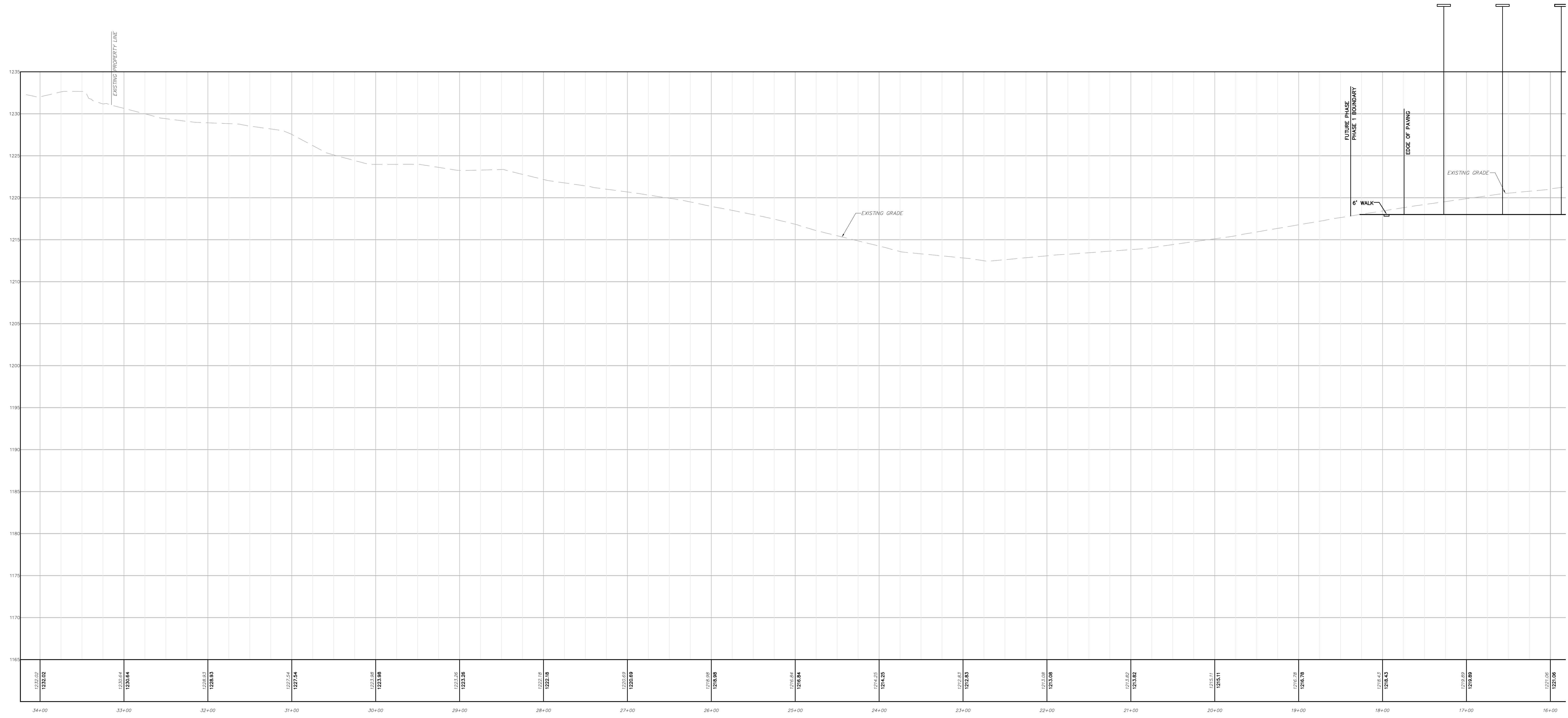
PHASE 1

<PRELIMINARY
 NOT FOR
 CONSTRUCTION>

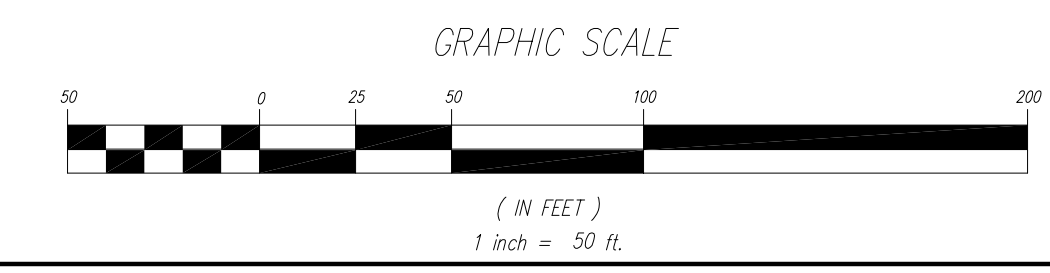
SHEET NAME
SITE

CROSS SECTIONS

C104.6



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



REVISIONS		
SYM	DATE	DESCRIPTION

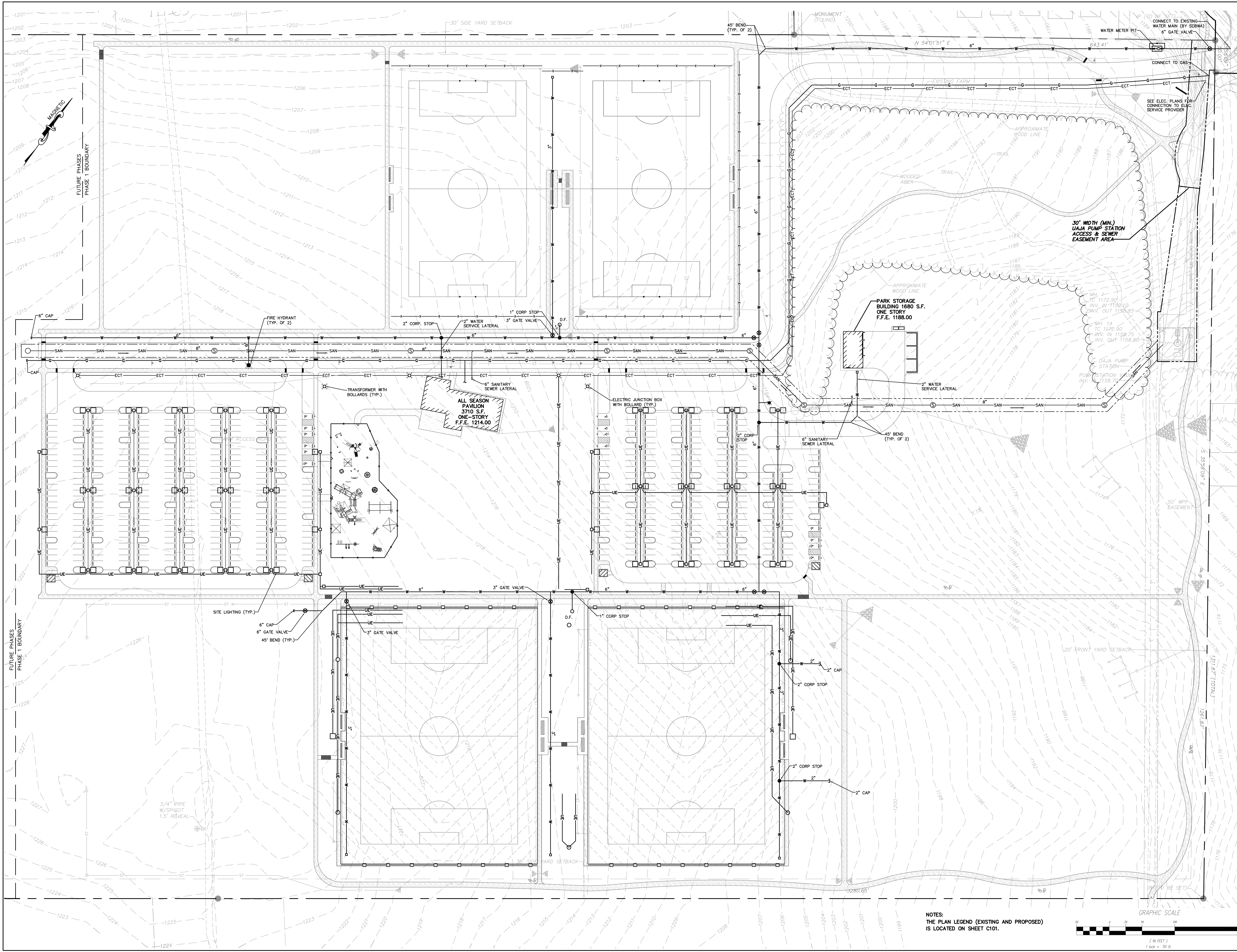
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

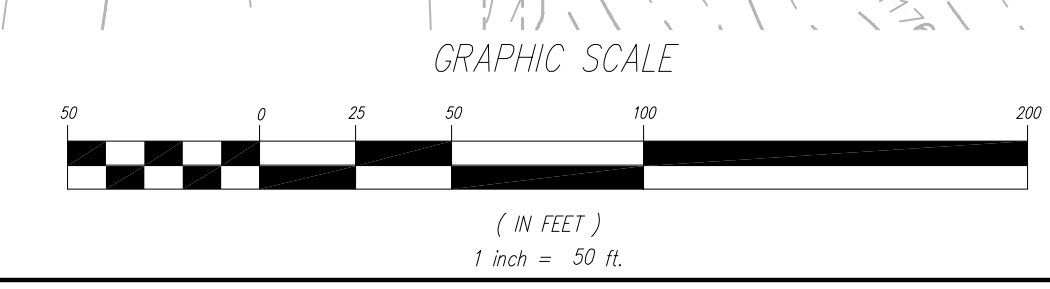
<PRELIMINARY
NOT FOR
CONSTRUCTION>

SHEET NAME
**OVERALL
UTILITY PLAN**

C105



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



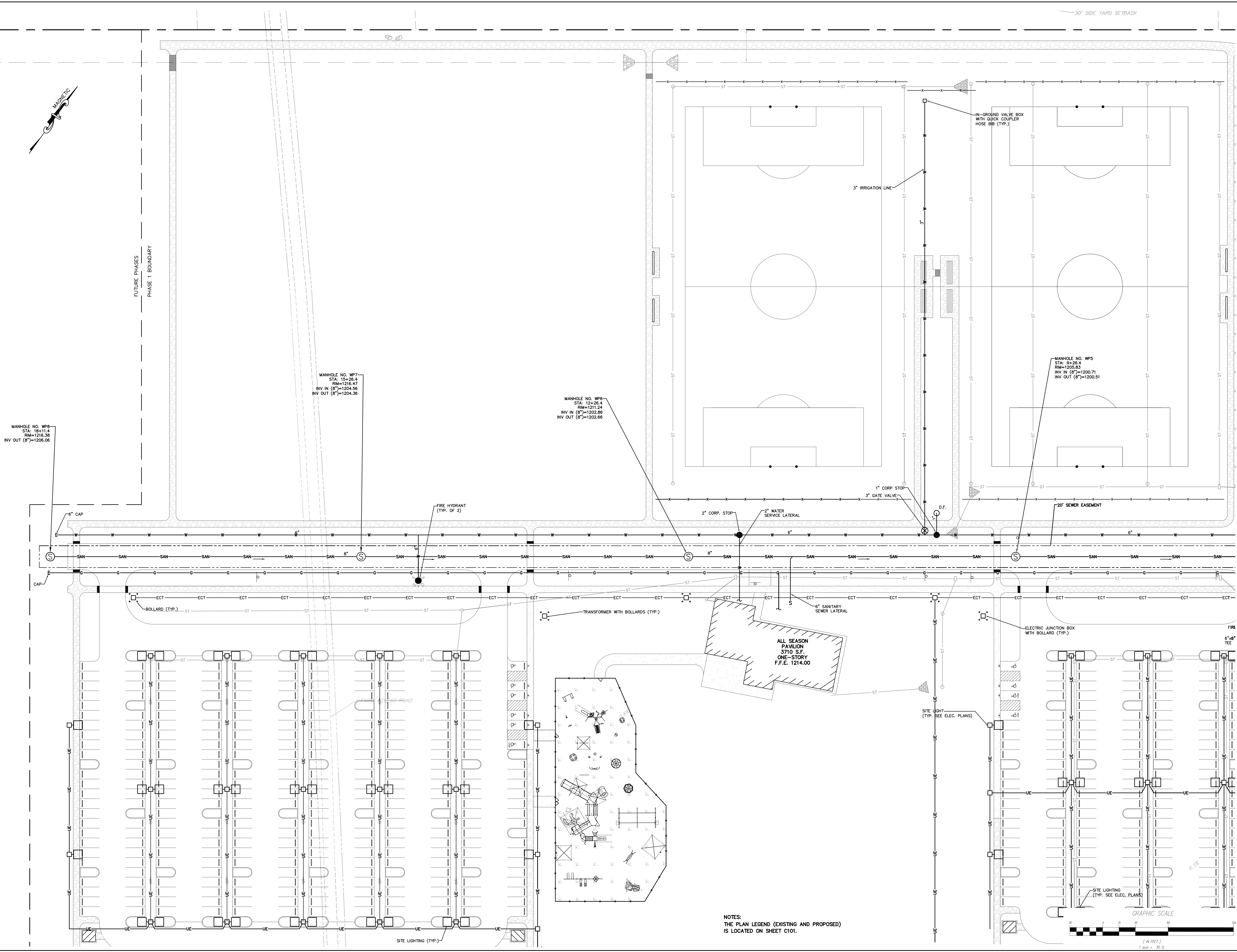
SYM	DATE	DESCRIPTION

SUBMISSIONS

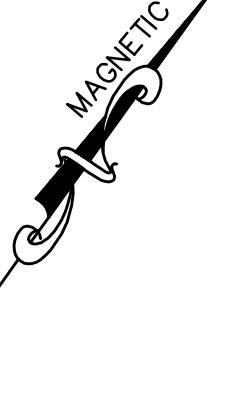
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

<PRELIMINARY
 NOT FOR
 CONSTRUCTION>



30' SIDE YARD SETBACK



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

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

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

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

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

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

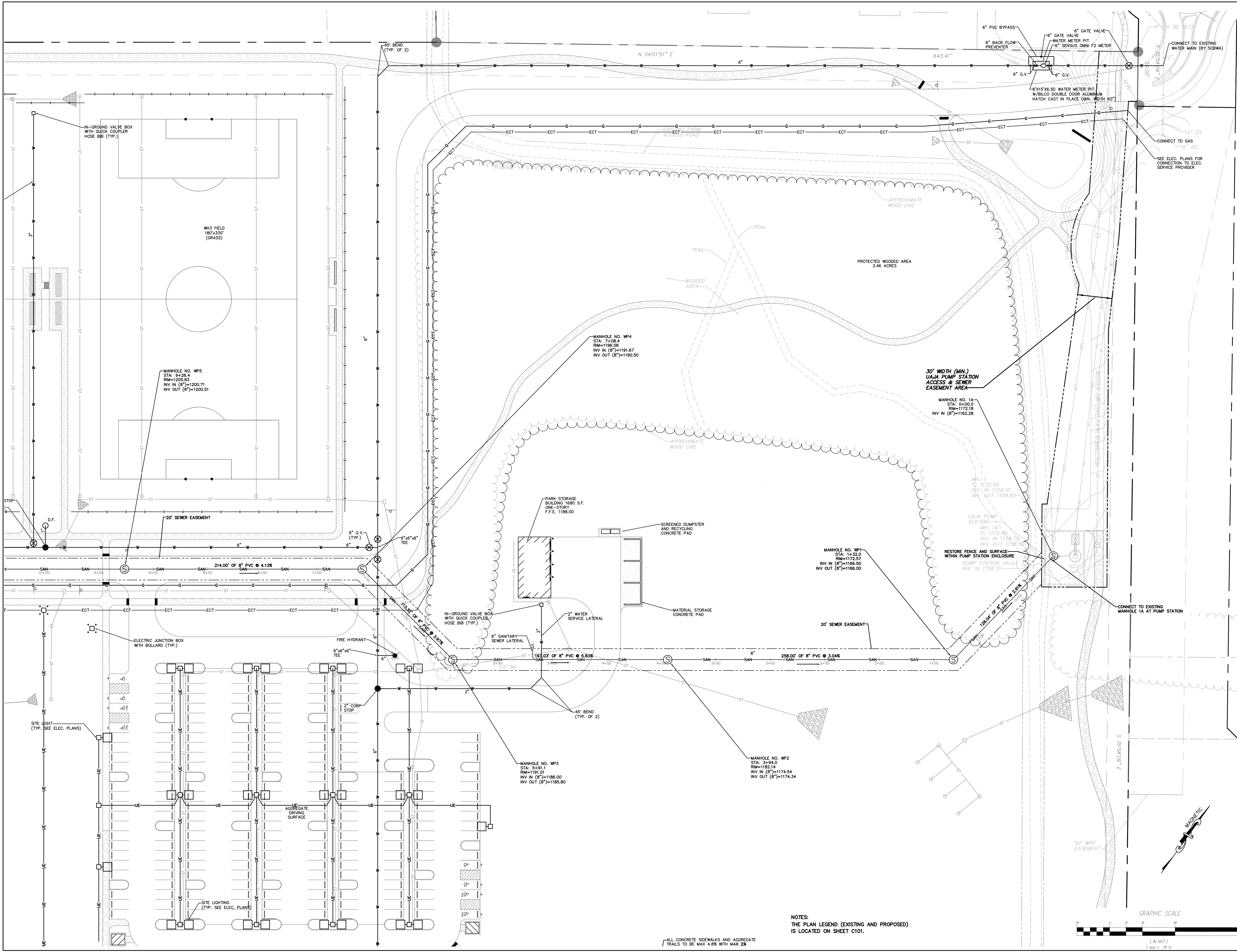
GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft

REVISIONS		
SYM	DATE	DESCRIPTION

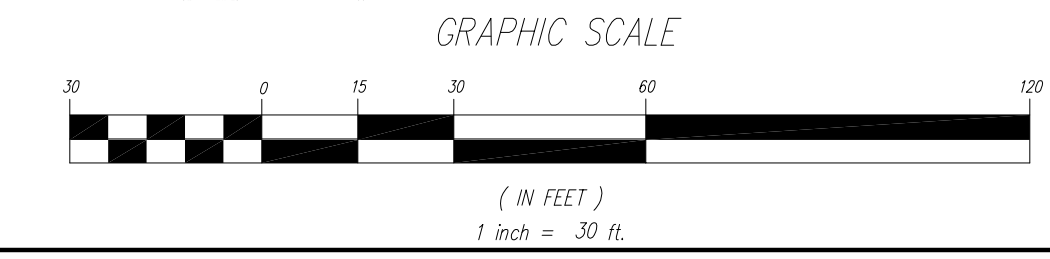
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



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



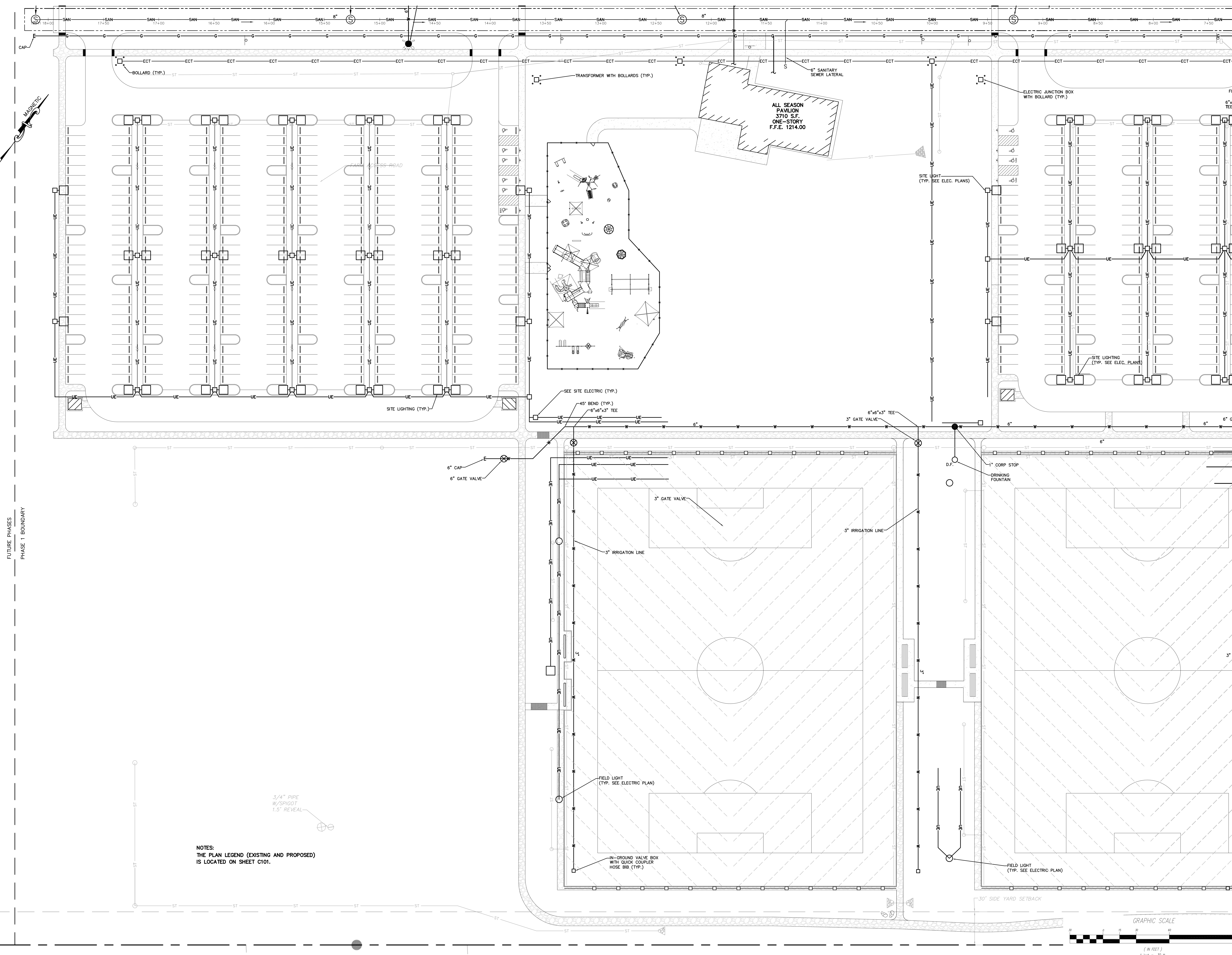
ALL CONCRETE SIDEWALKS AND AGGREGATE
 TRAILS TO BE MAX 4.8% WITH MAX 2%

REVISIONS		
SYM	DATE	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



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

3/4" PIPE
 W/ SPIGOT
 1.5" REVEAL

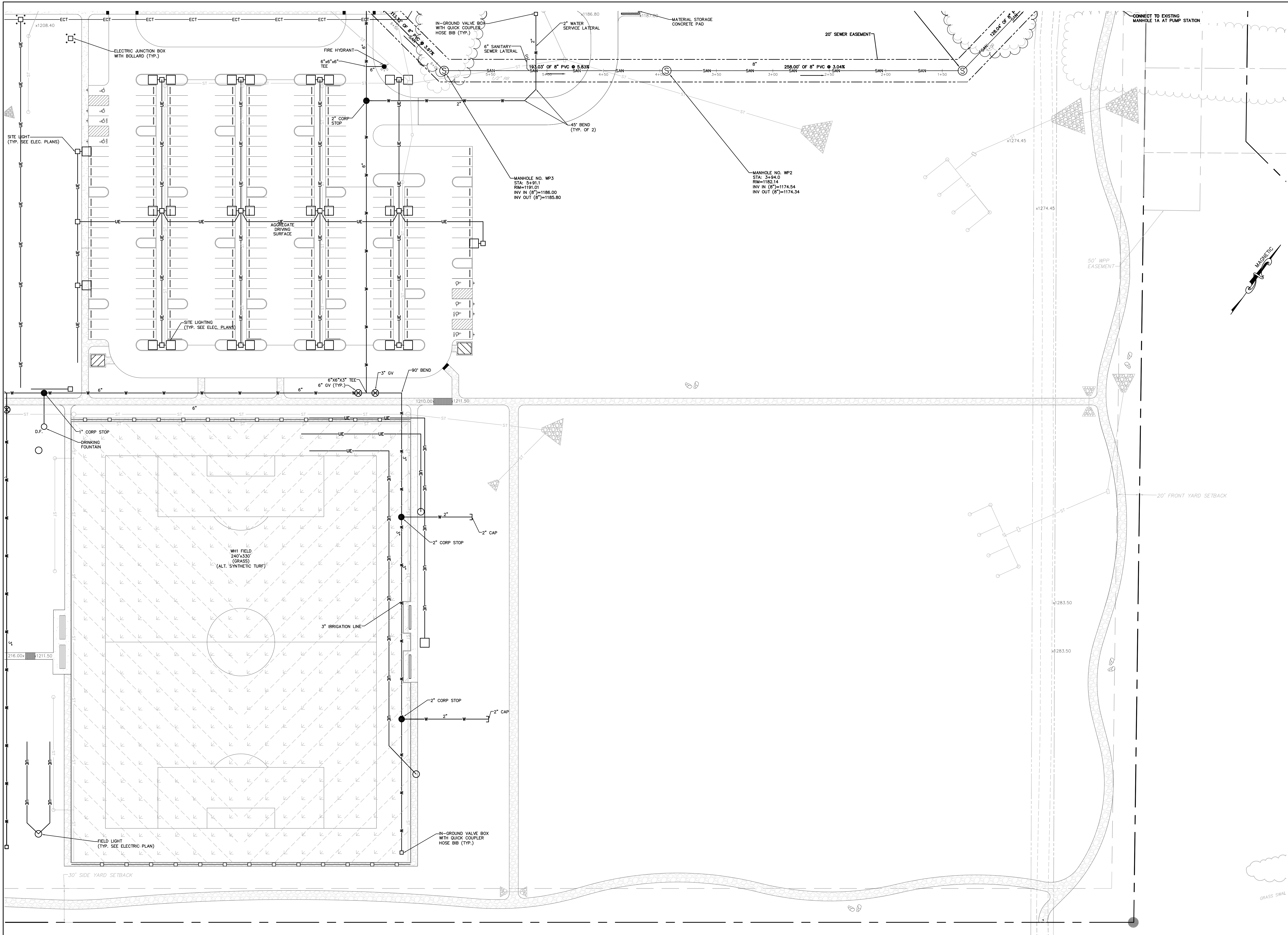
FUTURE PHASES
 PHASE 1 BOUNDARY

SYM	DATE	DESCRIPTION

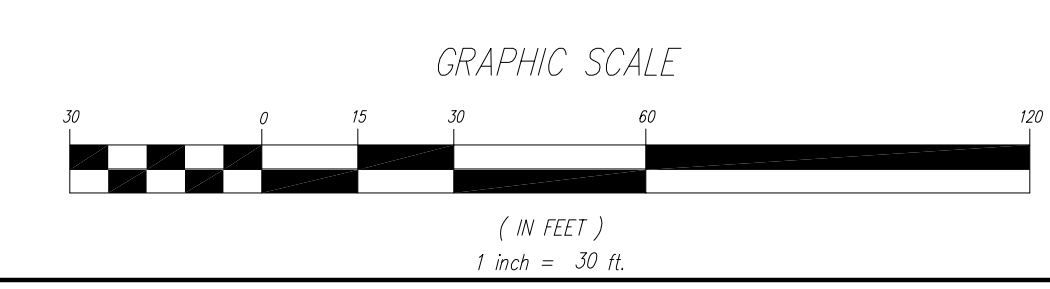
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

<PRELIMINARY
NOT FOR
CONSTRUCTION>



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

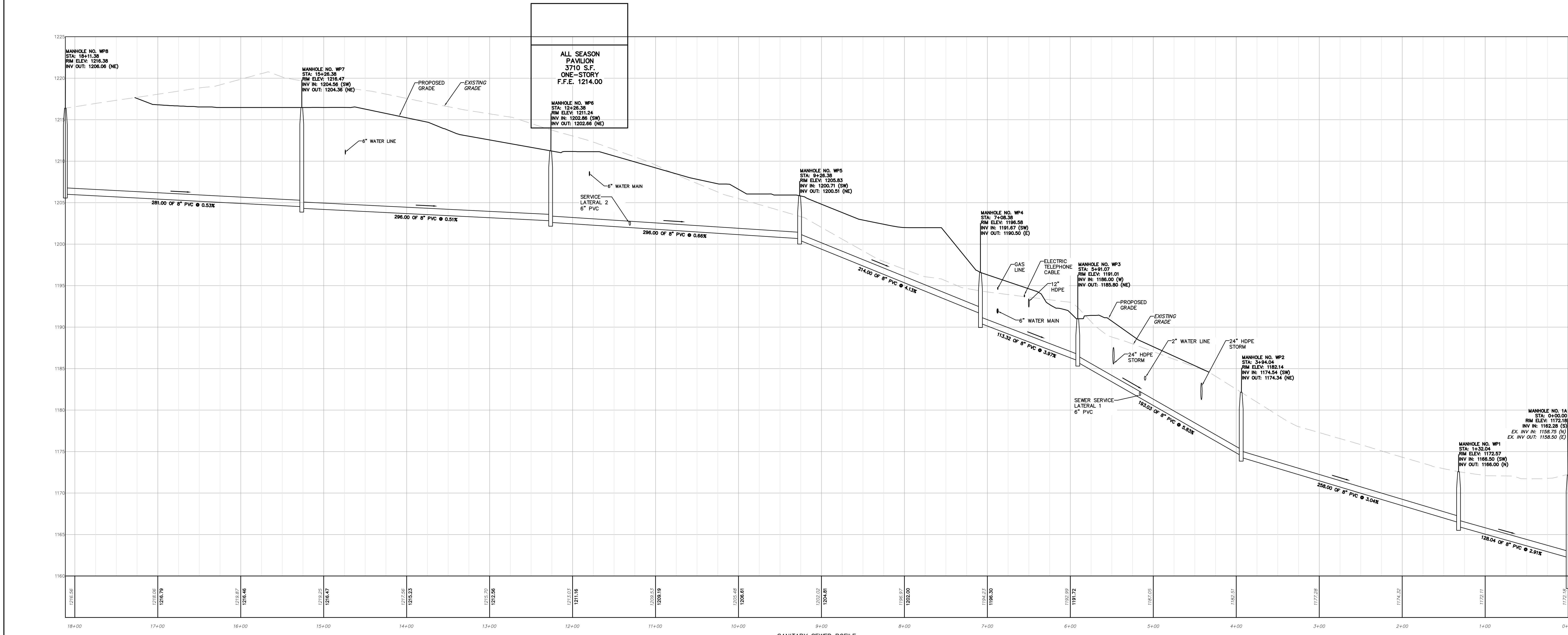
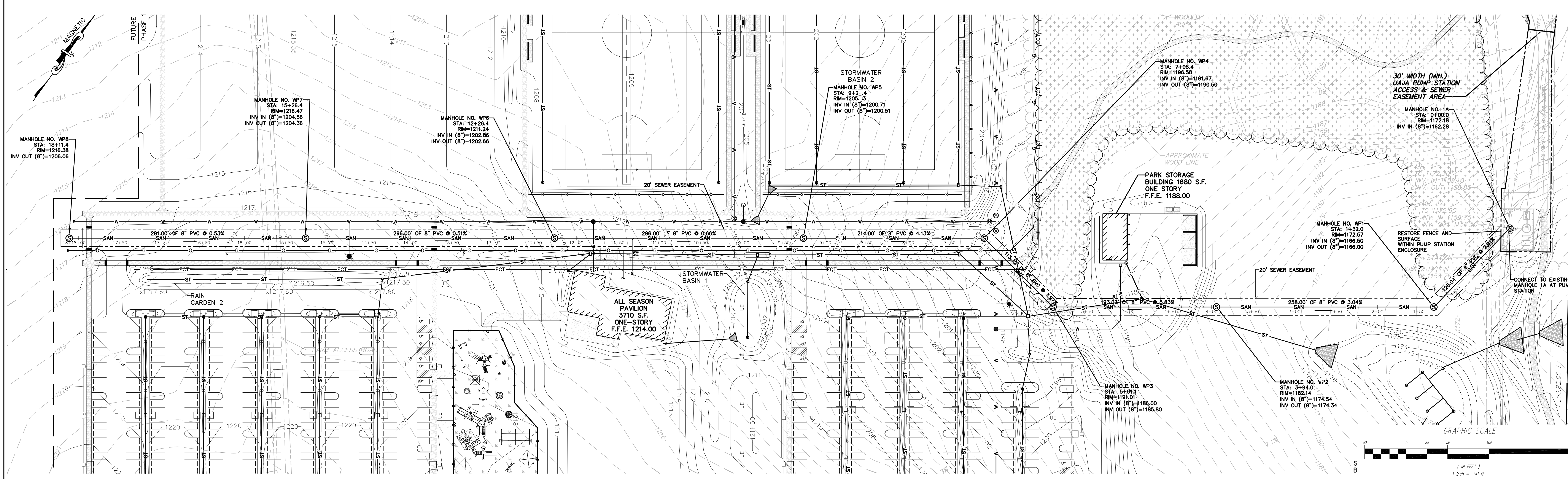


REVISIONS	
SYM	DESCRIPTION

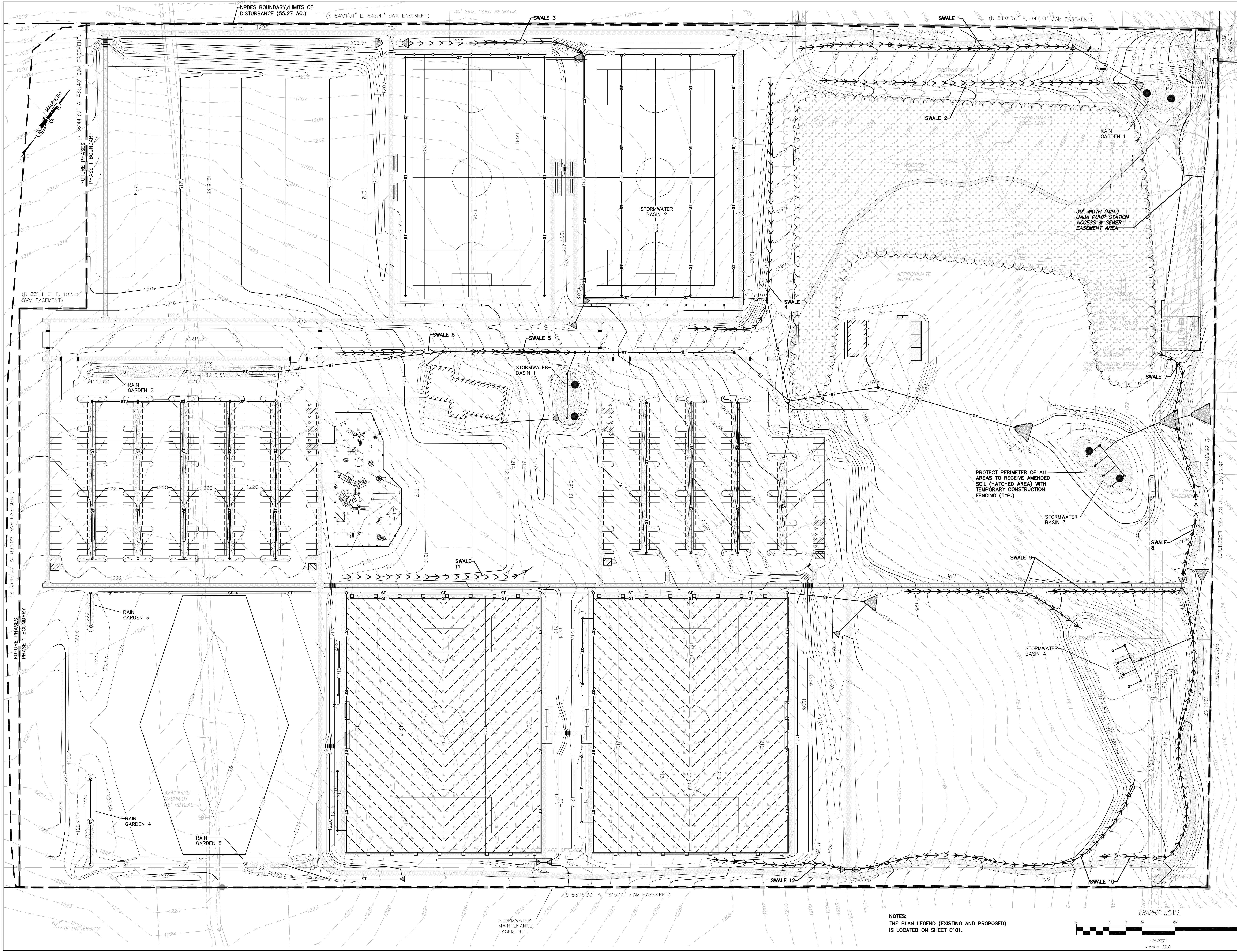
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



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



REVISIONS	
SYM	DESCRIPTION

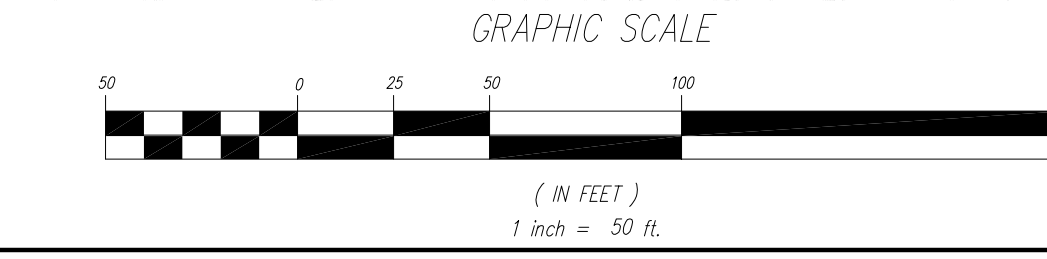
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME	OVERALL POST CONSTRUCTION STORMWATER MANAGEMENT
------------	---

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



REVISIONS

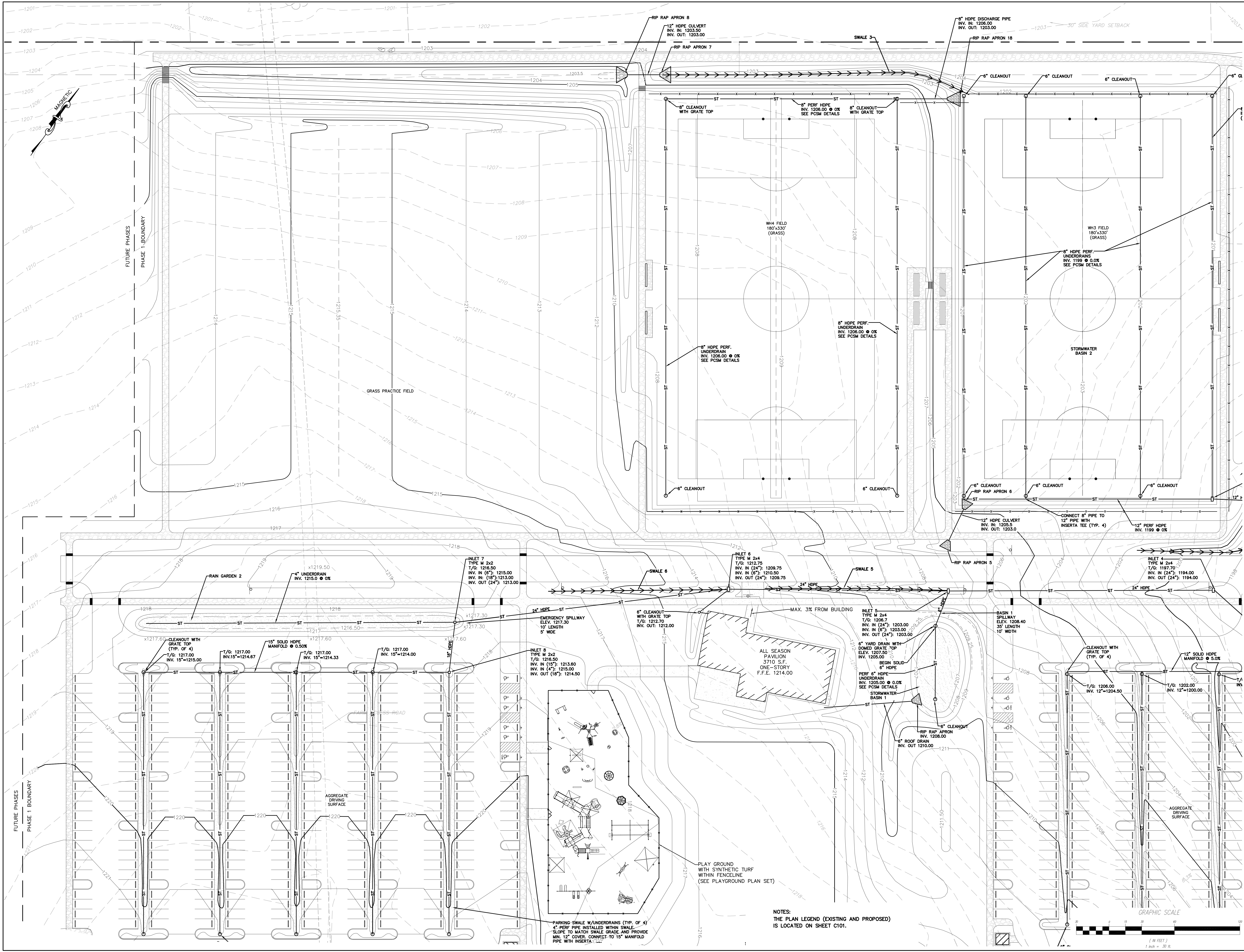
SYM	DATE	DESCRIPTION

SUBMISSIONS

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

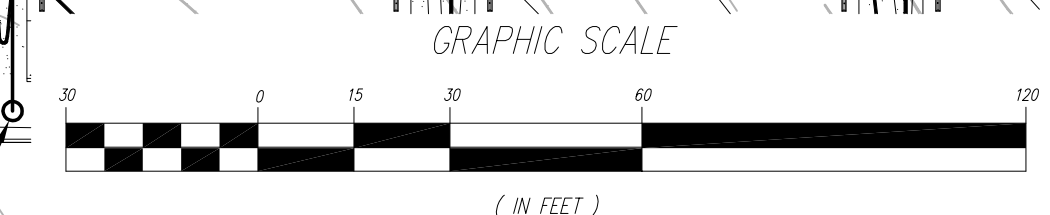
**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

<PRELIMINARY
 NOT FOR
 CONSTRUCTION>



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

PARKING SWALE W/UNDERDRAINS (TYP. OF 4)
 4" PERF PIPE INSTALLED WITH SWALE.
 SLOPE TO MATCH SWALE GRADE AND PROVIDE
 MIN. 12" COVER. CONNECT TO 15" MANIFOLD
 PIPE WITH INSERTA TEE.



REVISIONS		
SYM	DATE	DESCRIPTION

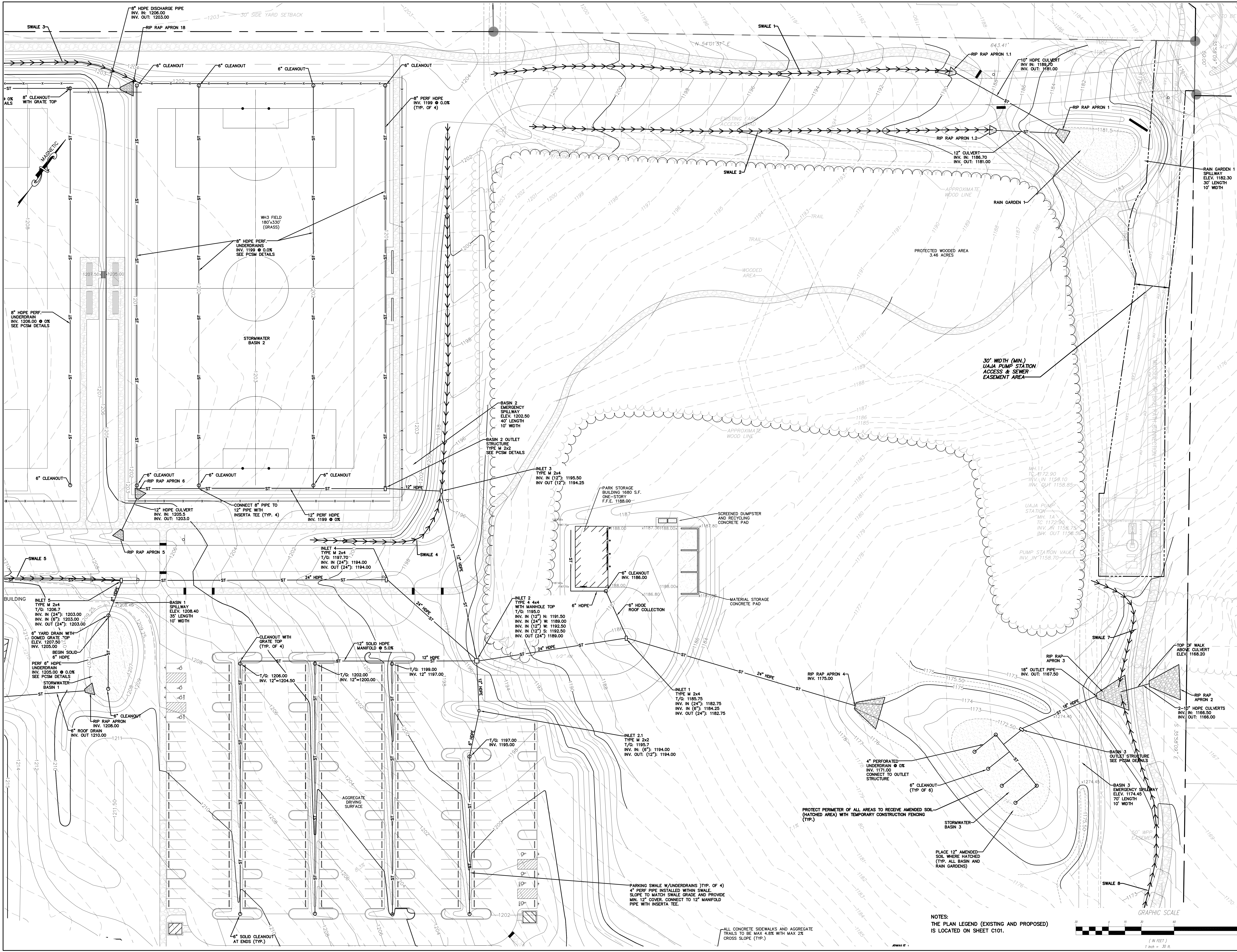
SUBMISSIONS		
DATE	DESCRIPTION	TWP. SUBMISSION
06/07/19	TWP. SUBMISSION 1	1
10/02/19	TWP. SUBMISSION 2	2

WHITEHALL ROAD REGIONAL PARK PHASE 1

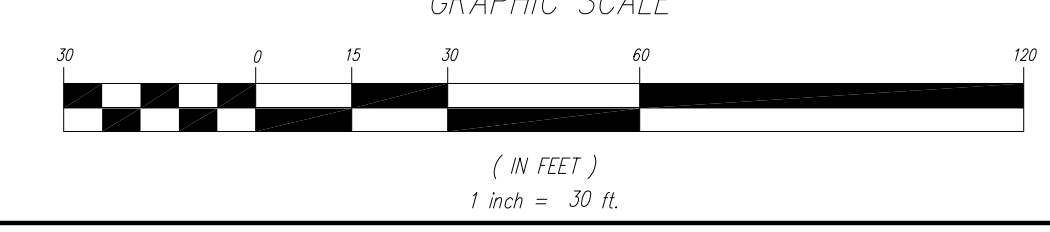
<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
POST CONSTRUCTION STORMWATER MANAGEMENT

C106.2



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



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

PARKING SWALE W/UNDERDRAINS (TYP. OF 4) 4\"/>

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

PLACE 12\"/>

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

BASIN 3 OUTLET STRUCTURE SEE PDSM DETAILS

2-12\"/>

18\"/>

TOP OF WALK ABOVE CULVERT ELEV. 1168.20

SWALE 7

SWALE 6

SWALE 5

SWALE 4

SWALE 3

SWALE 2

SWALE 1

RAIN GARDEN 1

RAIN GARDEN 2

PROTECTED WOODED AREA 3.46 ACRES

APPROXIMATE WOOD LINE

EXISTING FARM ACCESS ROAD

TRAIL

TRAIL

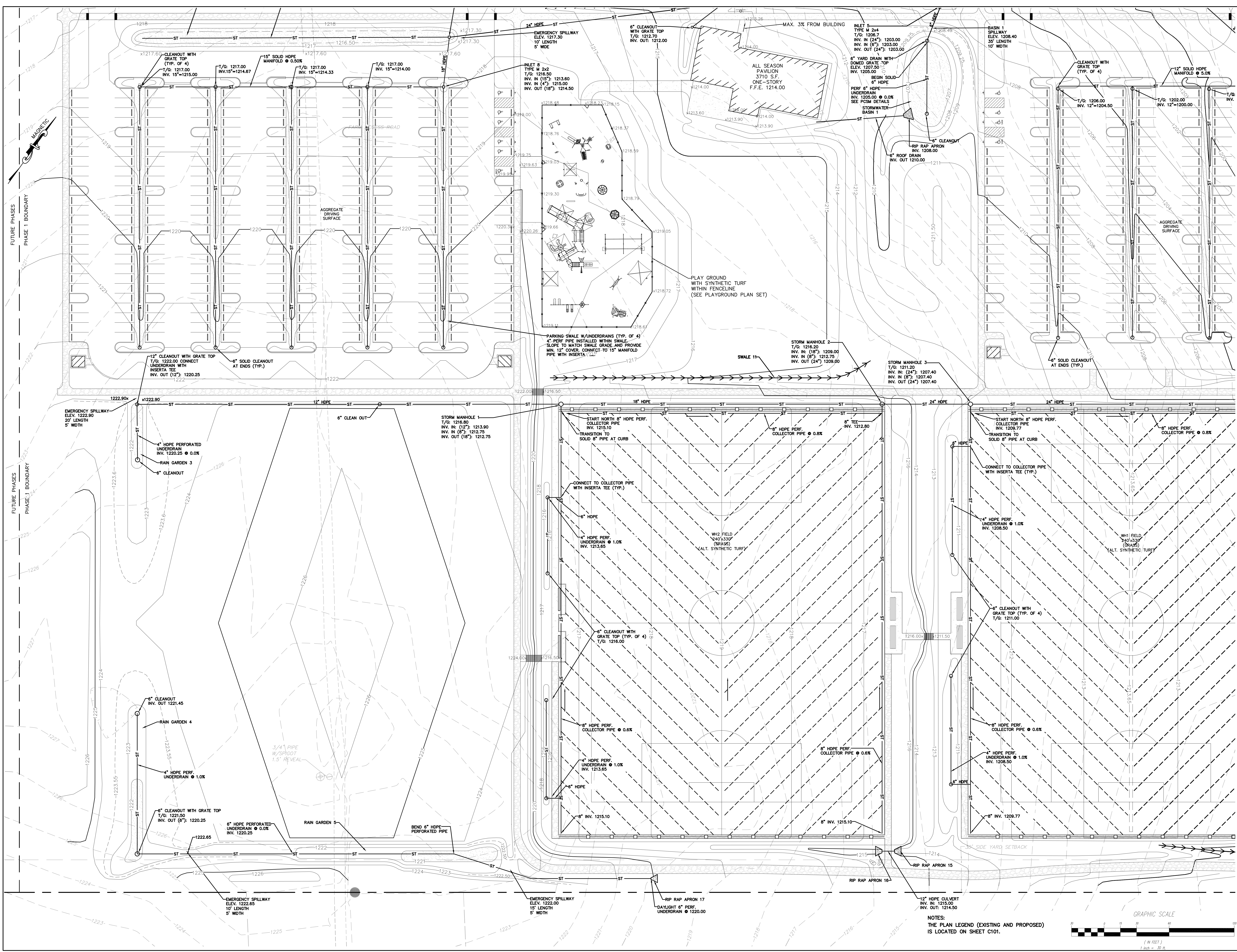
TRAIL

TRAIL

TRAIL

TRAIL

TRAIL



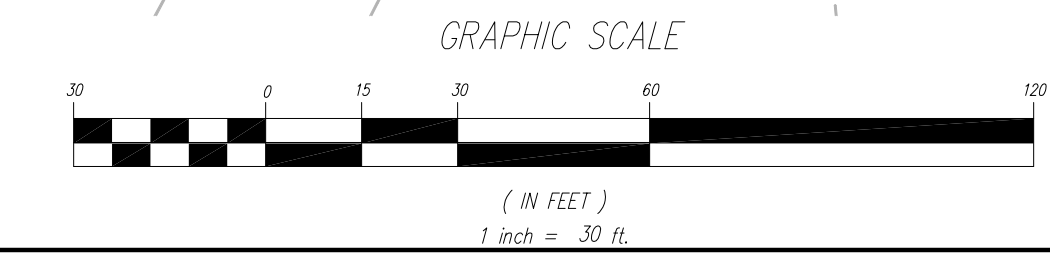
REVISIONS	
SYM	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

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



REVISIONS	
SYM	DESCRIPTION

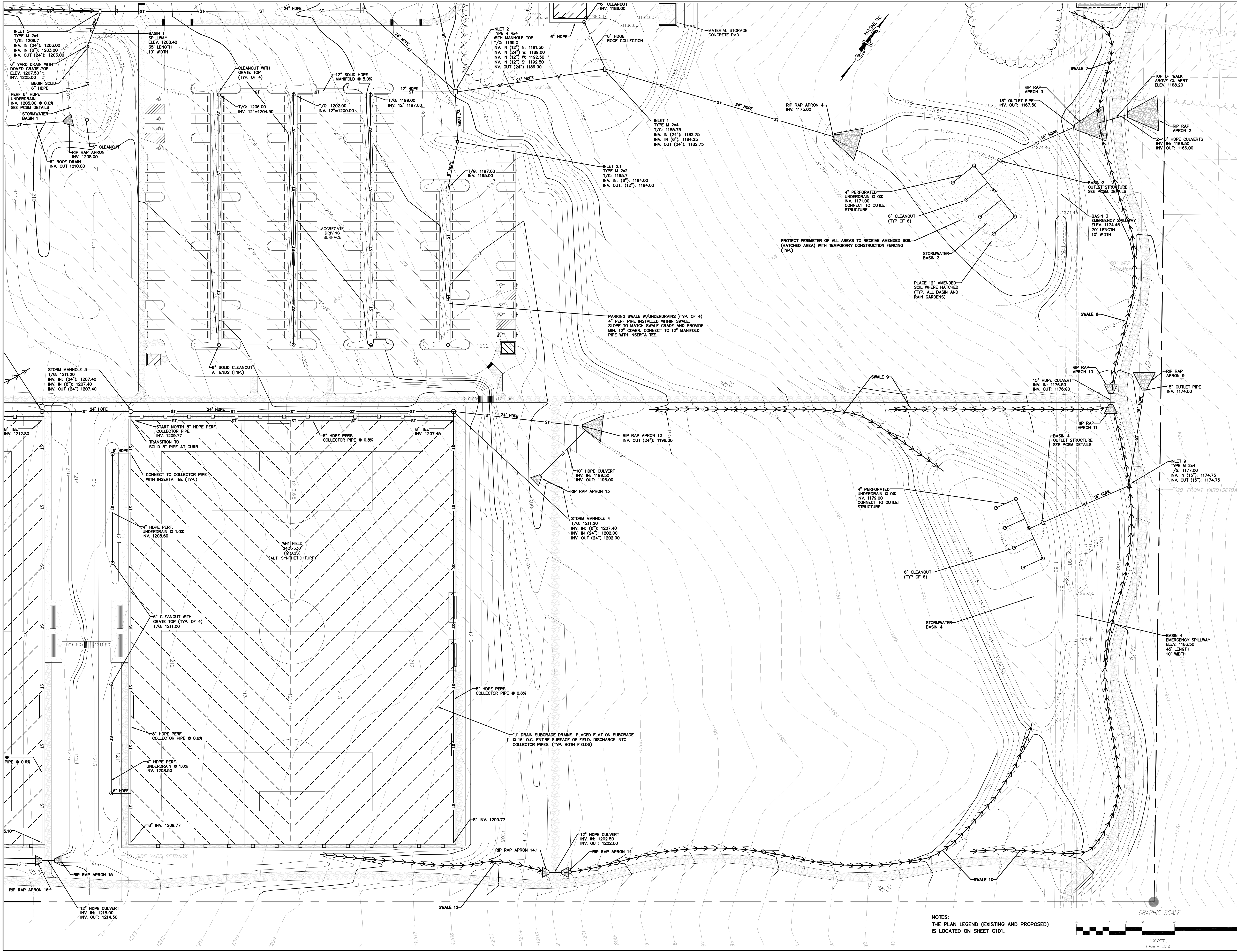
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

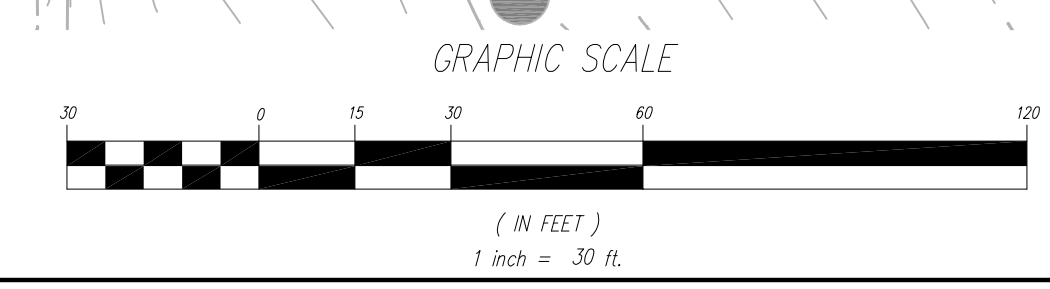
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NOT FOR
CONSTRUCTION>

SHEET NAME
**POST CONSTRUCTION
STORMWATER
MANAGEMENT**

C106.4



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



REVISIONS	
SYM	DESCRIPTION

SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

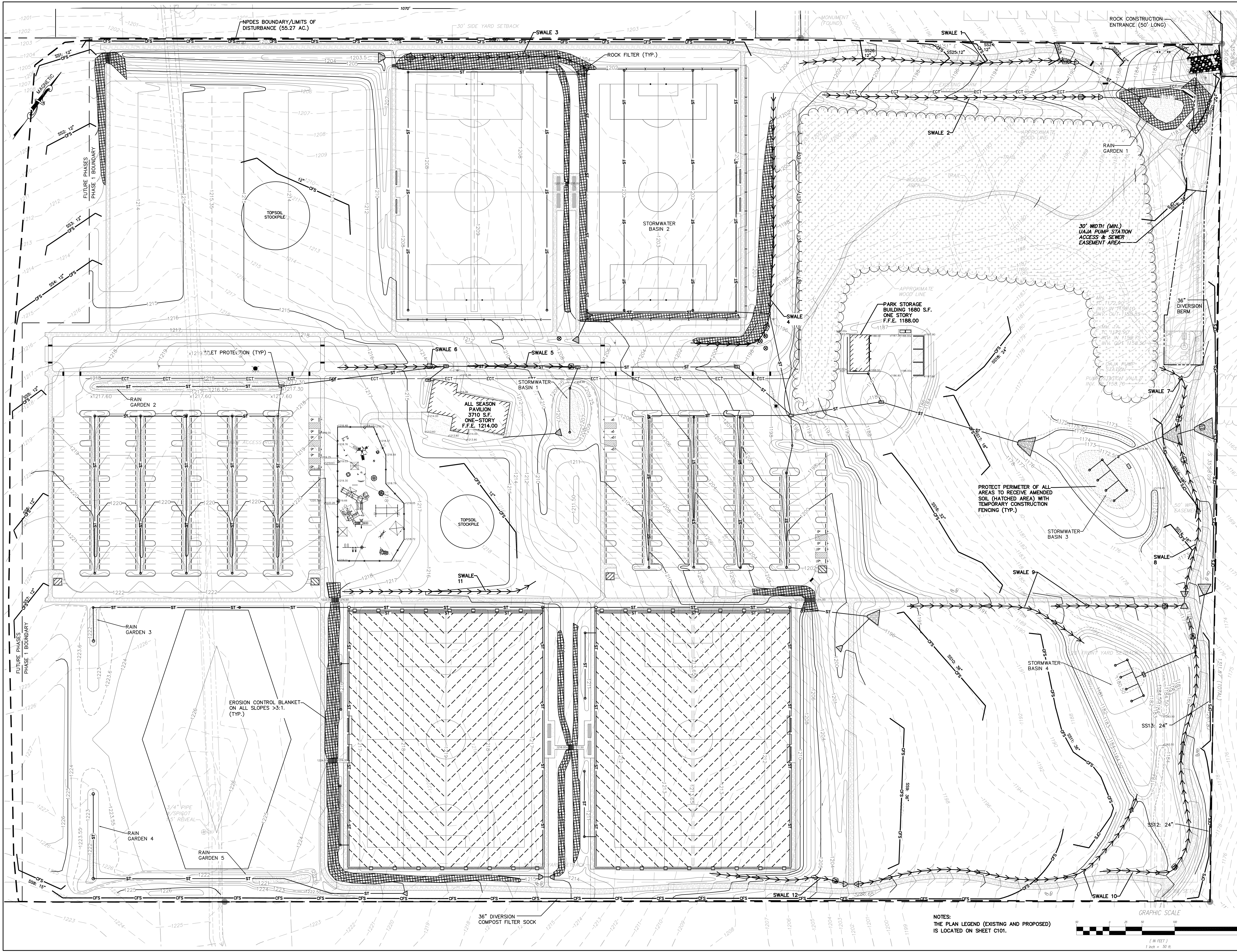
WHITEHALL ROAD

REGIONAL

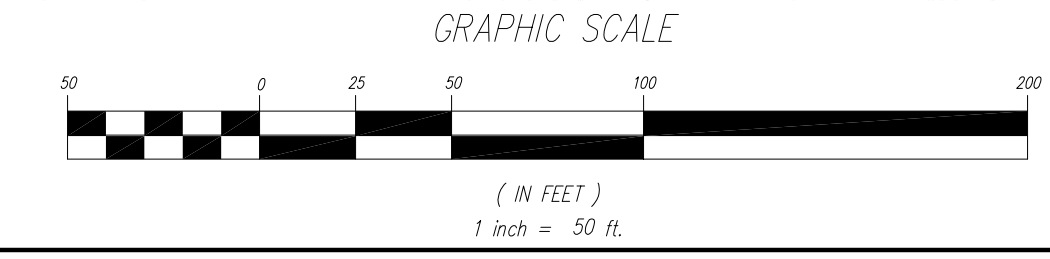
PARK

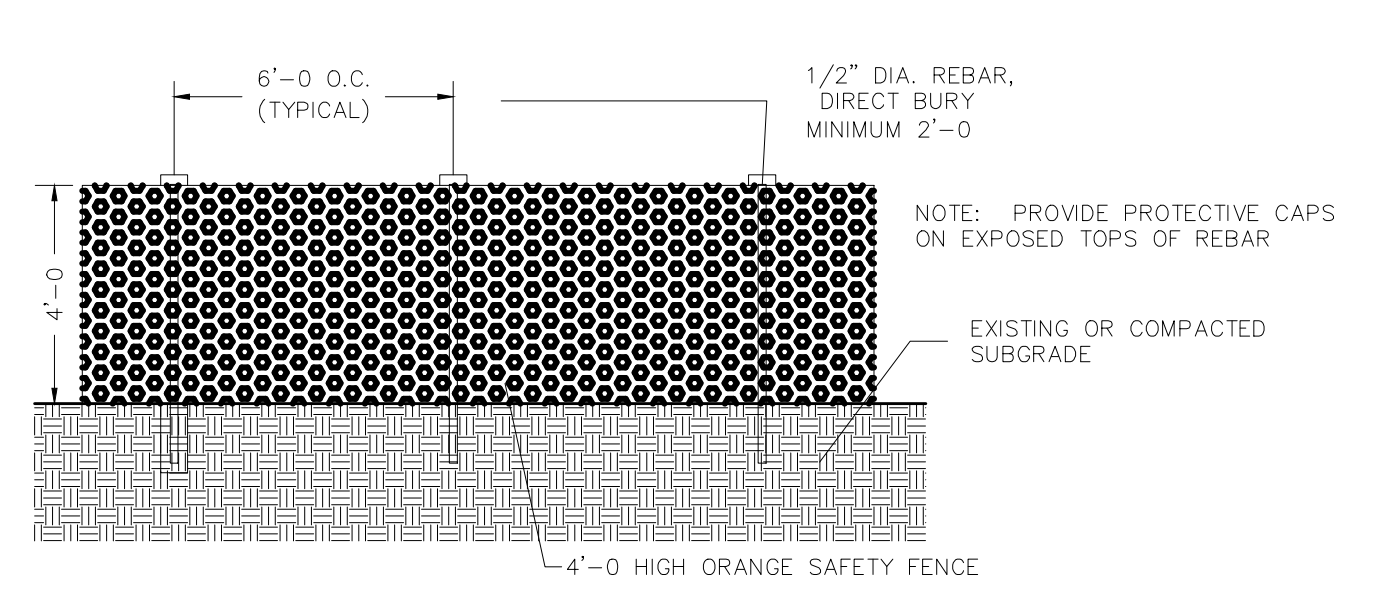
PHASE 1

<PRELIMINARY
 NOT FOR
 CONSTRUCTION>

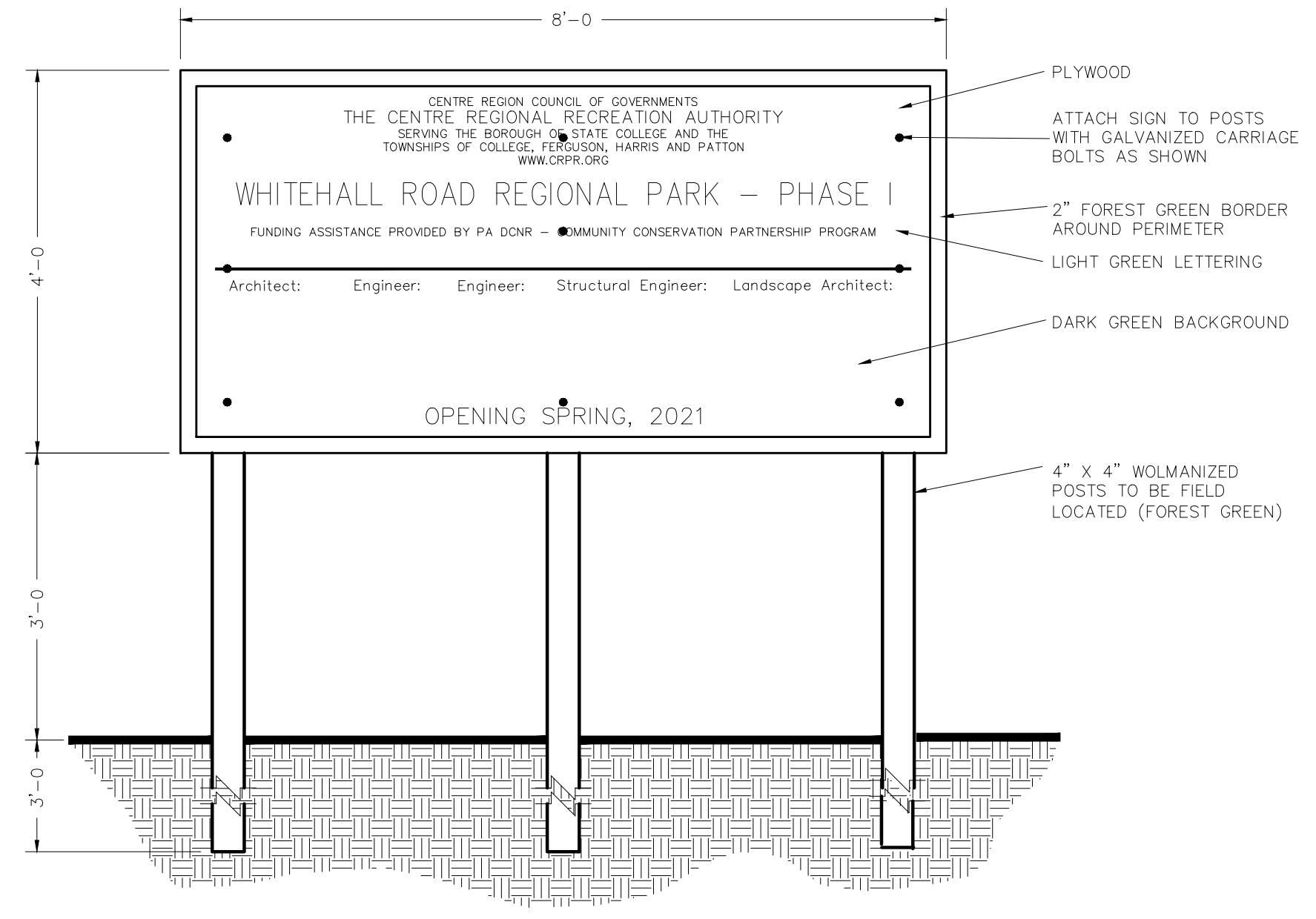


NOTES:
 THE PLAN LEGEND (EXISTING AND PROPOSED)
 IS LOCATED ON SHEET C101.

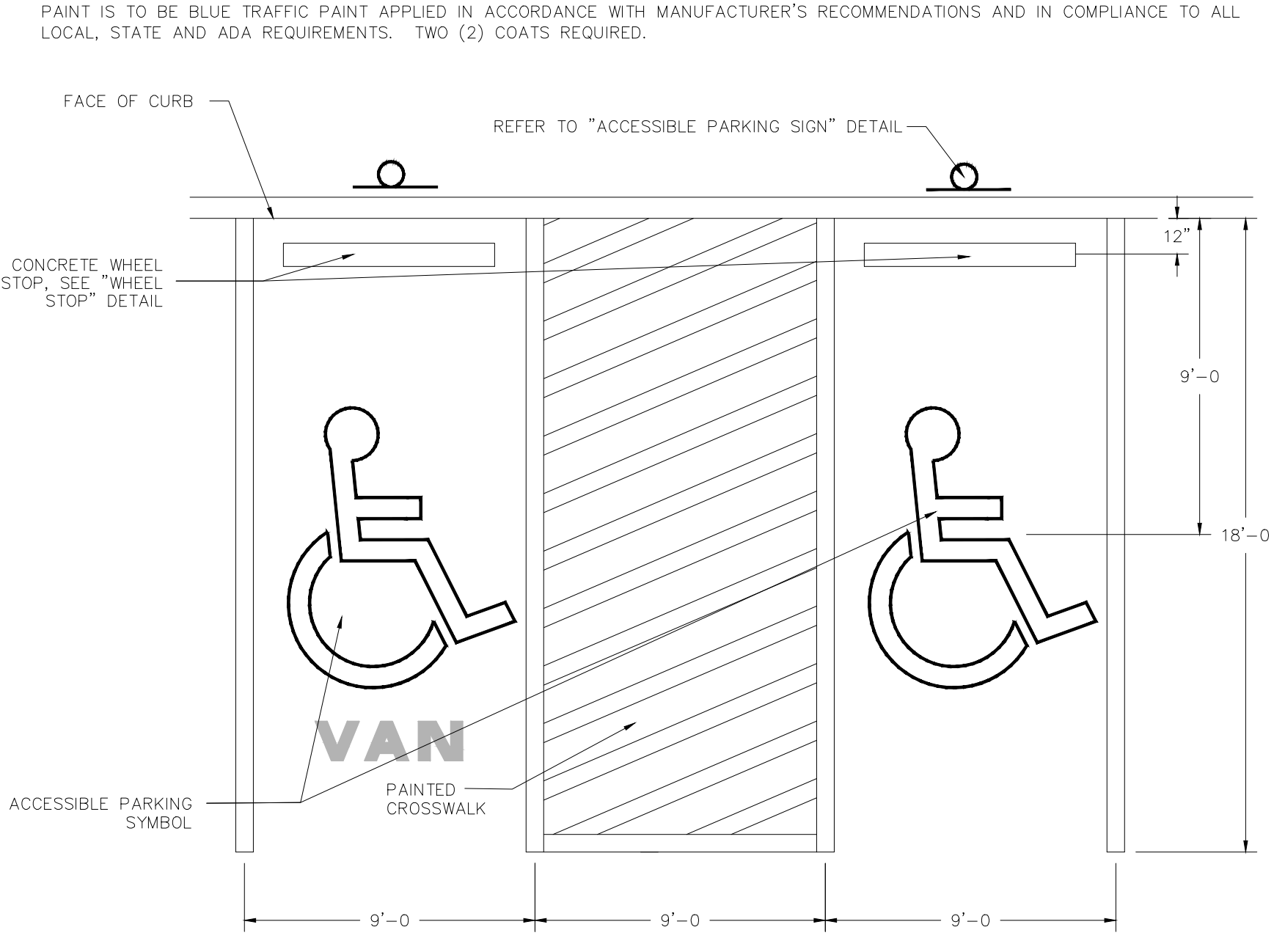




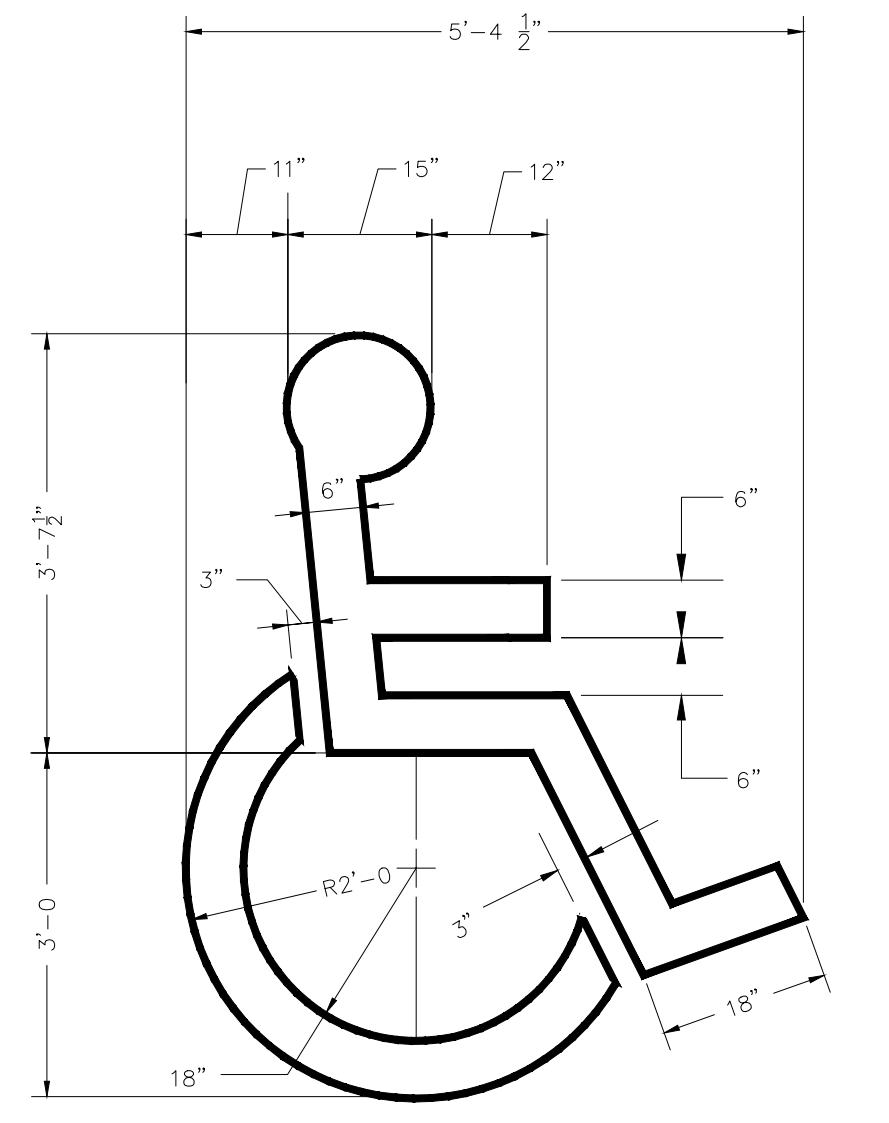
TEMPORARY CONSTRUCTION FENCE
N.T.S.



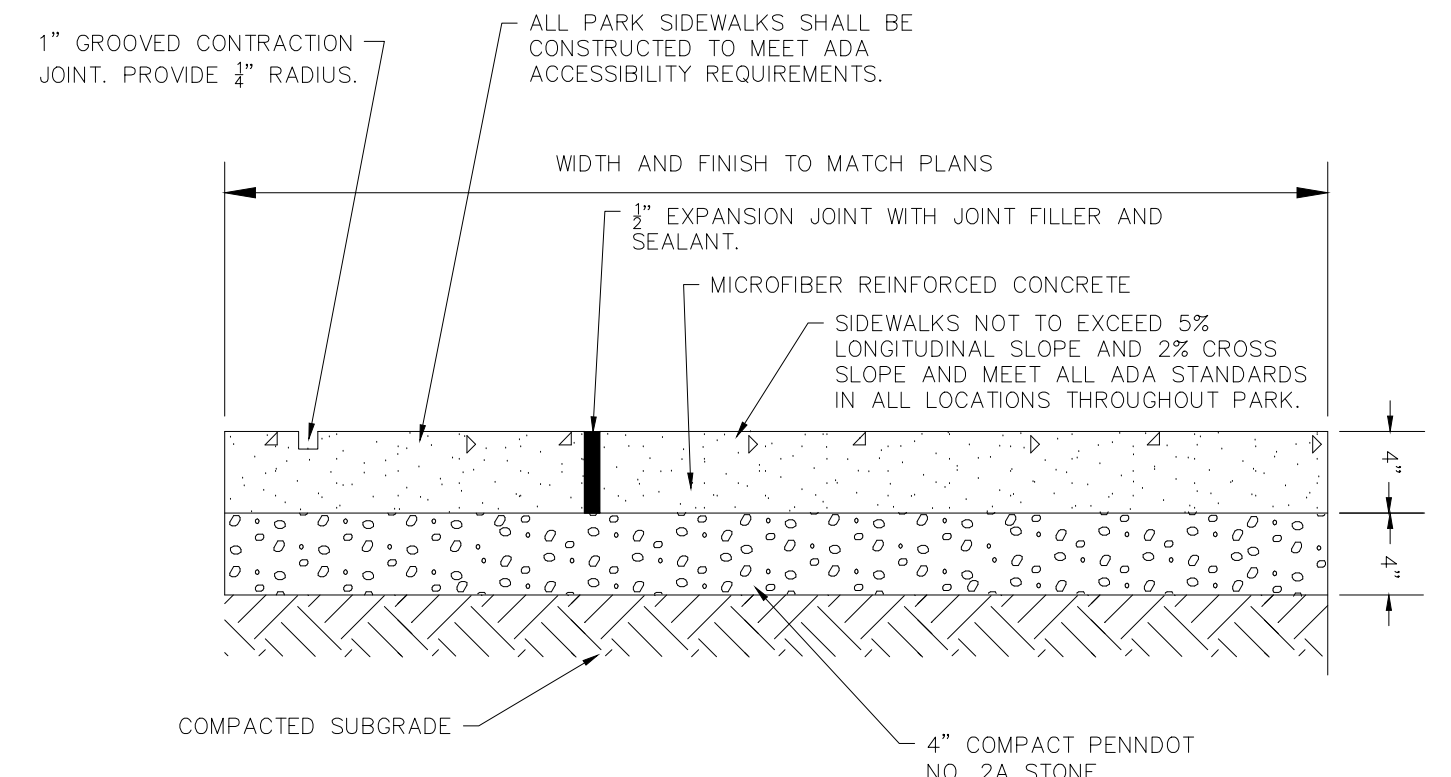
TEMPORARY CONSTRUCTION SIGN
N.T.S.



ACCESSIBLE PARKING AND LINESSTRIPING
N.T.S.

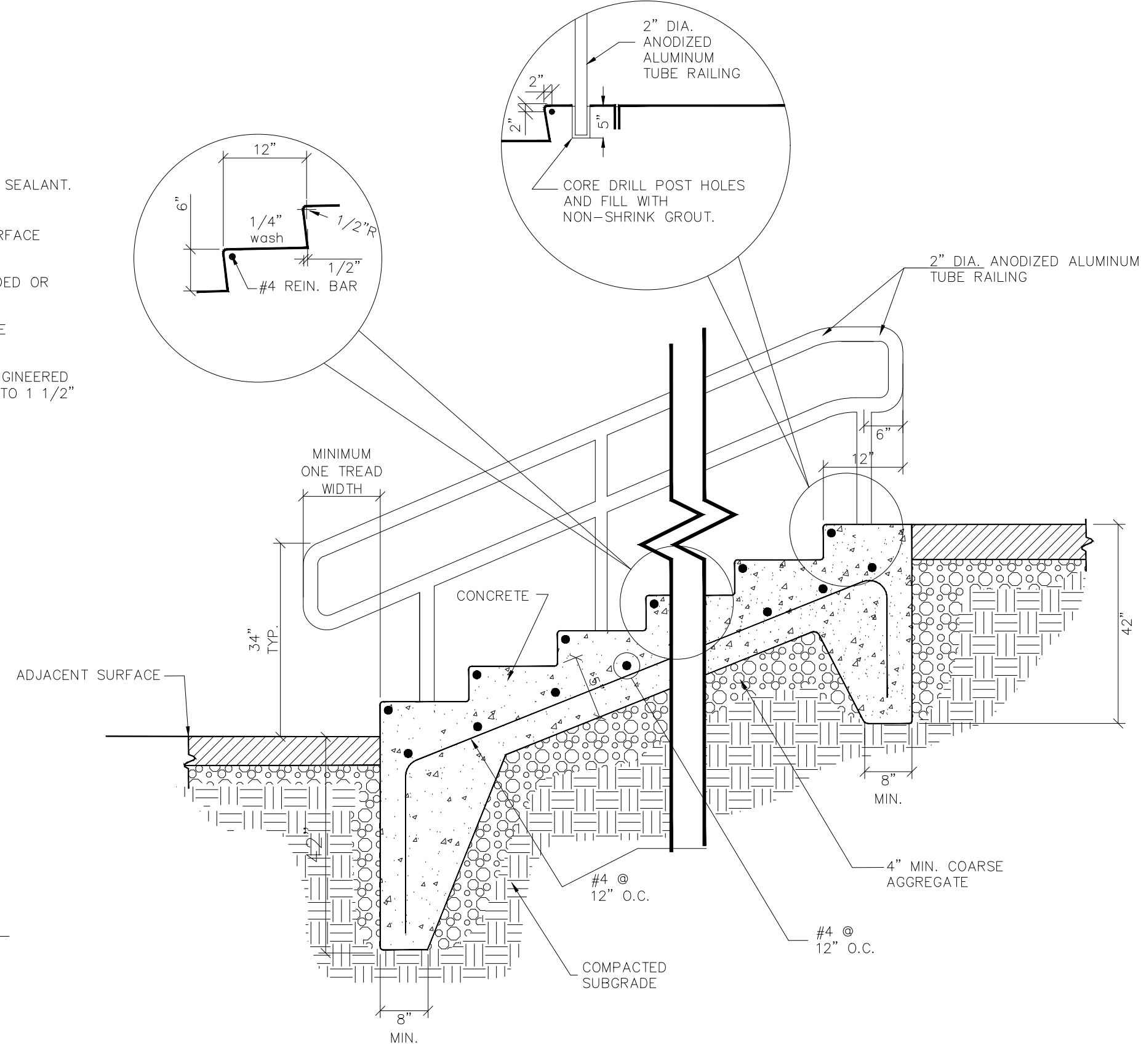


ACCESSIBLE PARKING SYMBOL
N.T.S.

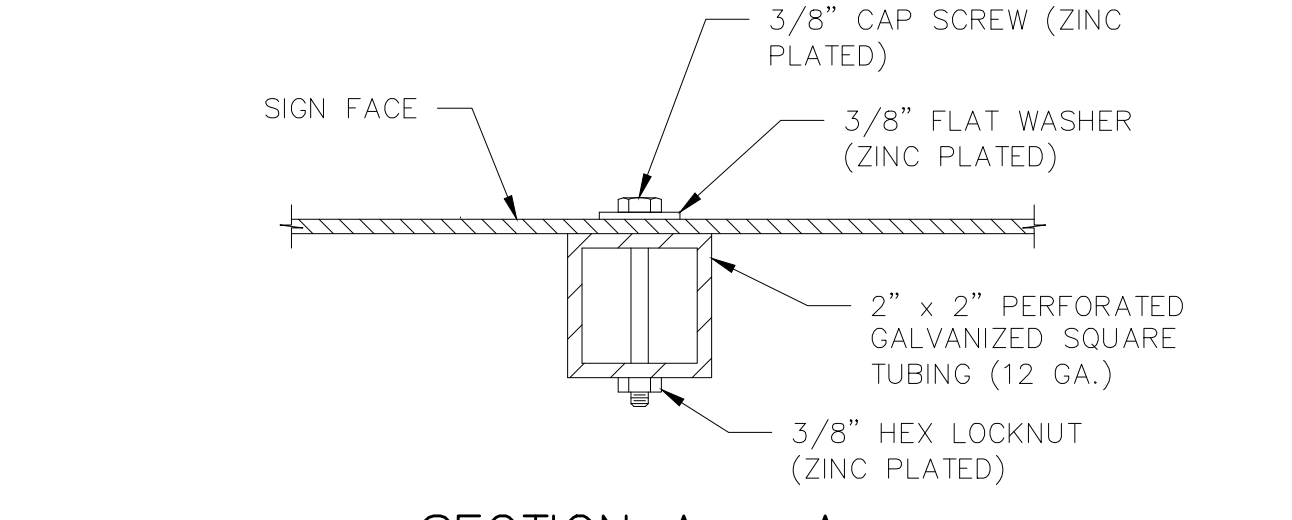


CONCRETE SIDEWALK
N.T.S.

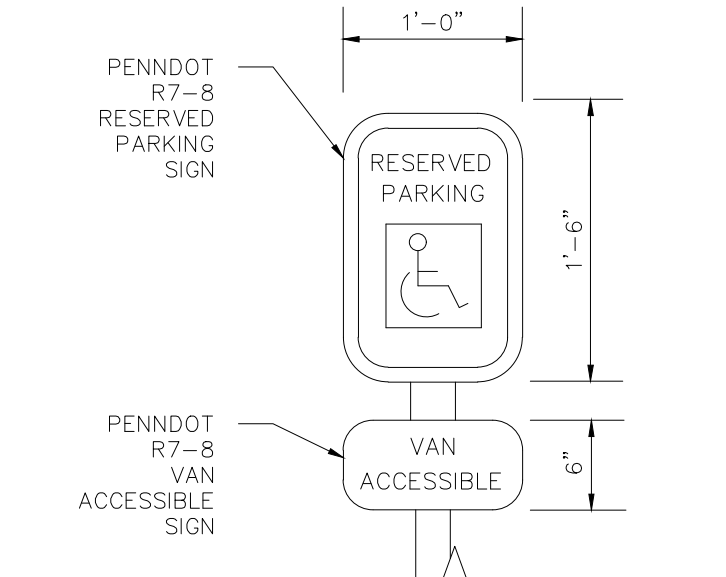
- NOTES:
- PROVIDE TOOLED CONTRACTION AT MAXIMUM 5'-0" SPACING.
 - PROVIDE 1/2" ISOLATION JOINTS AT MAXIMUM 20'-0" SPACING AND WHERE SIDEWALK ABUTS DRIVEWAYS, CURB AND ADJACENT STRUCTURES. INSTALL ASPHALT IMPREGNATED MATERIAL, CLOSED-CELL BACKER ROD AND POLYURETHANE SEALANT. PLACE PREFORMED FILLER AND RECESS TOP OF FILLER ONE INCH FOR SEALANT.
 - TOOL ALL EDGES OF PAVING AND JOINTS WITH EDGING TOOL TO A 1" RADIUS. REPEAT TOOLING AFTER APPLYING SURFACE FINISHES.
 - 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.
 - CONCRETE SHALL HAVE A MEDIUM-TO-COARSE BROOM FINISH PERPENDICULAR TO THE LINE OF TRAFFIC TO PRODUCE NON-SLIP SURFACE, UNLESS OTHERWISE INDICATED.
 - SYNTHETIC MICRO-FIBER REINFORCEMENT SHALL BE ALKALI-RESISTANT FIBRILLATED POLYPROPYLENE MICROFIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM C1116/C1116M, TYPE II, WITH FIBER LENGTH OF 1/2" TO 1 1/2" NOMINAL. FIBER REINFORCEMENT SHALL BE ADDED AT A MIX RATE AS RECOMMENDED BY MANUFACTURER.



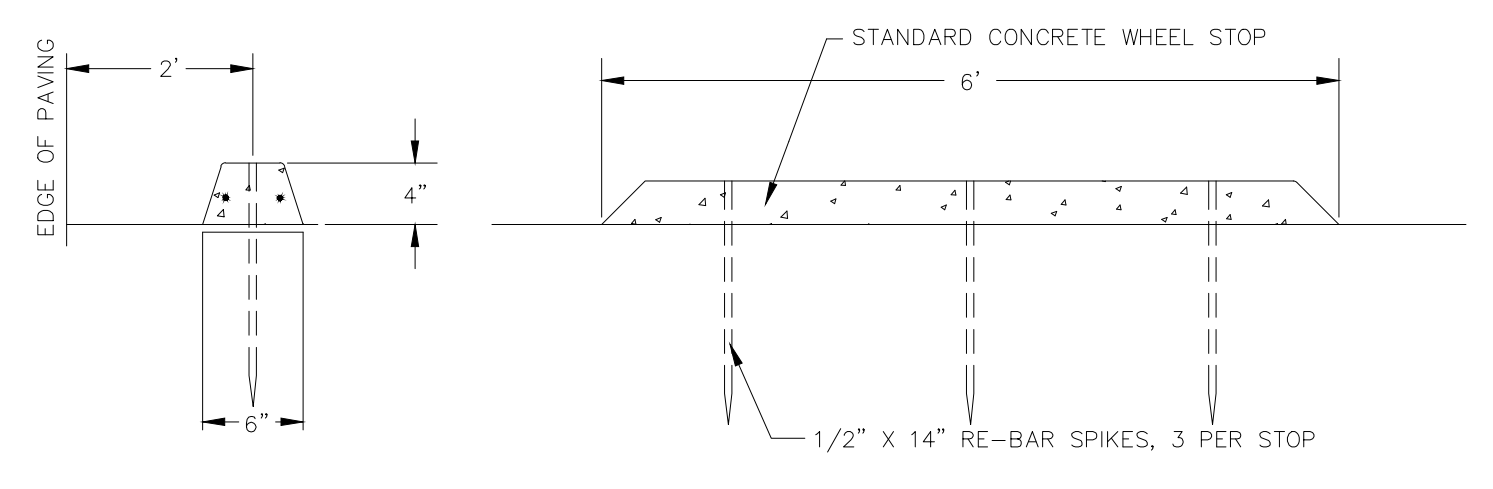
CONCRETE STEPS WITH HANDRAILS
N.T.S.



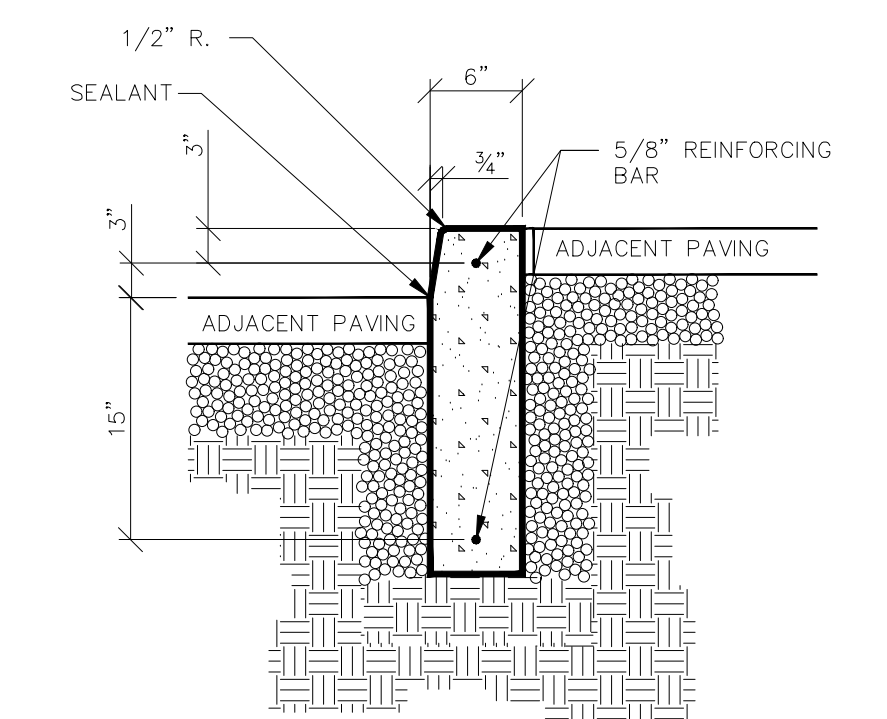
POST-MOUNTED SIGN BASE
N.T.S.



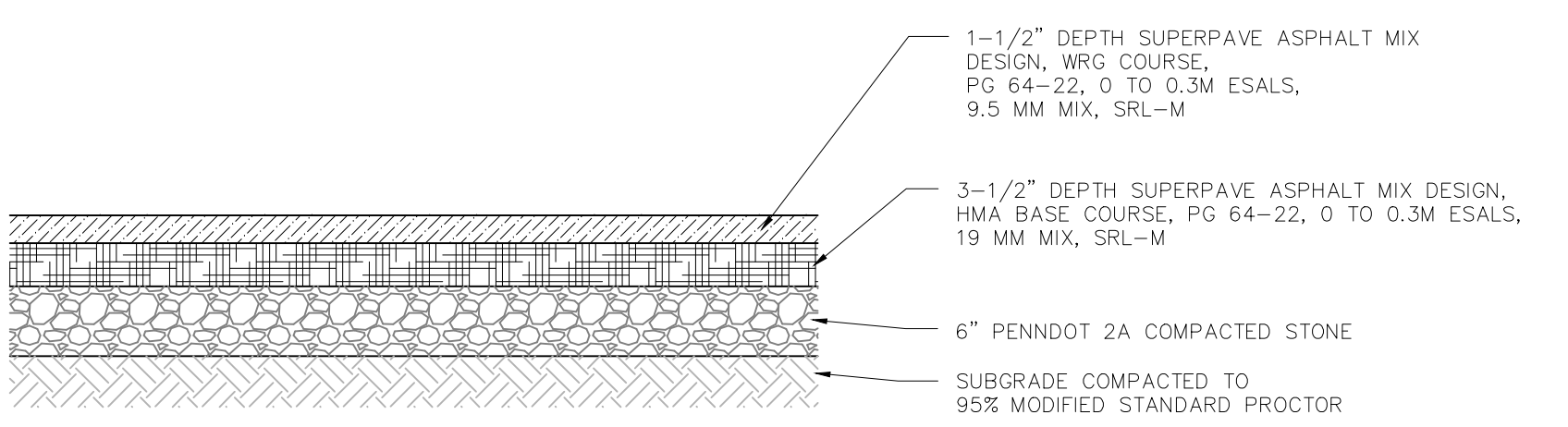
ACCESSIBLE PARKING SIGN DETAIL
N.T.S.



WHEEL STOP
N.T.S.



FULL DEPTH CONCRETE CURB
N.T.S.



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.

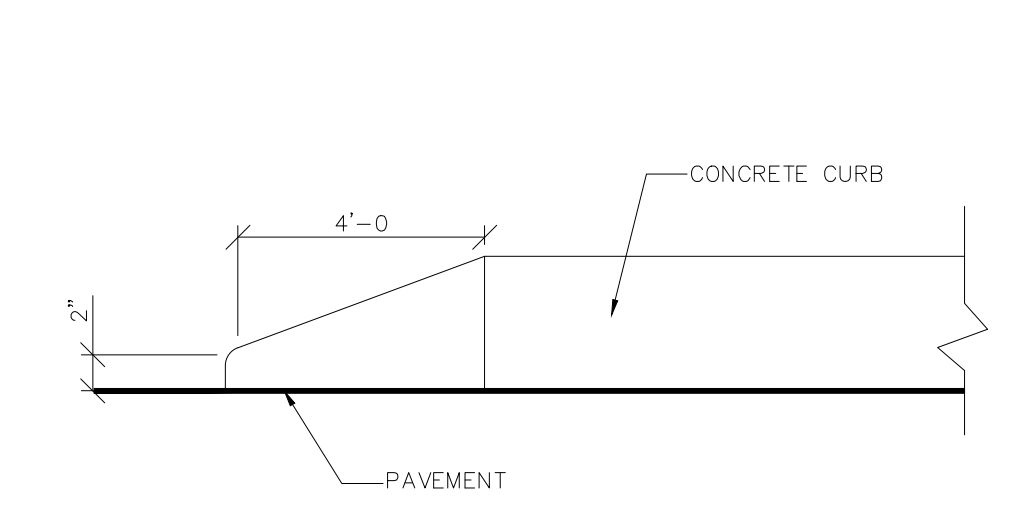
DRIVING SURFACE AGGREGATE MIX GRADATION

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

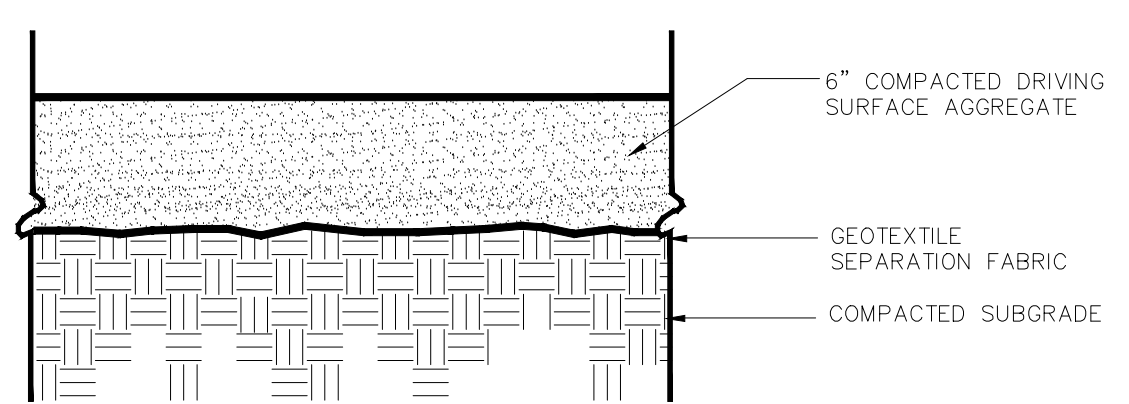
TRAIL MIX SHALL MEET THE SPECIFICATIONS FOR "TRAIL AGGREGATE MIX" AS SPECIFIED IN THE "AGGREGATE HANDBOOK" PUBLISHED BY THE PENN STATE CENTER FOR DIRT & GRAVEL ROAD STUDIES.

TRAIL AGGREGATE MIX GRADATION

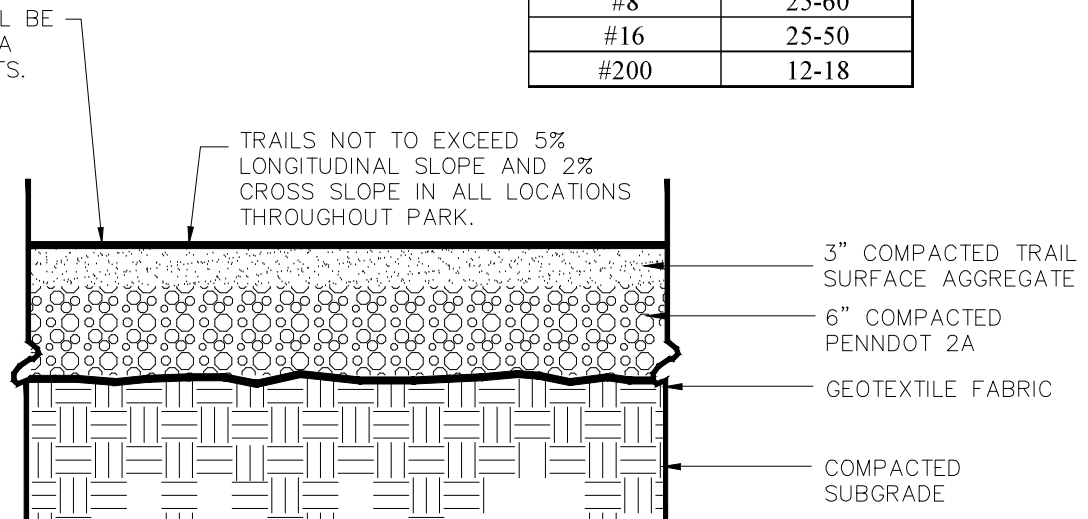
Sieve Size	Percent Passing
1/2"	100%
3/8"	90-100
#4	50-85
#8	25-60
#16	25-50
#200	12-18



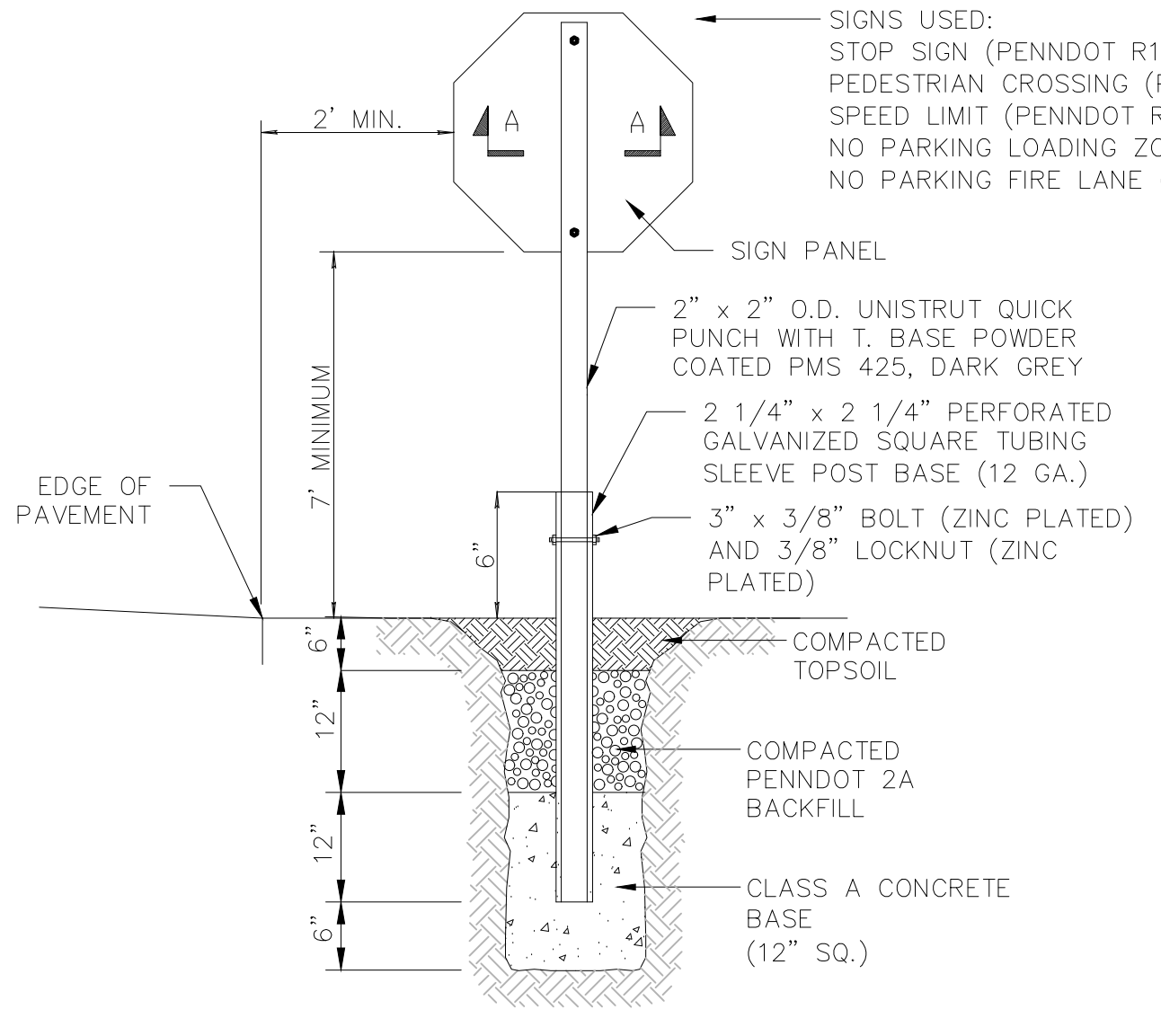
CURB END DETAIL
N.T.S.



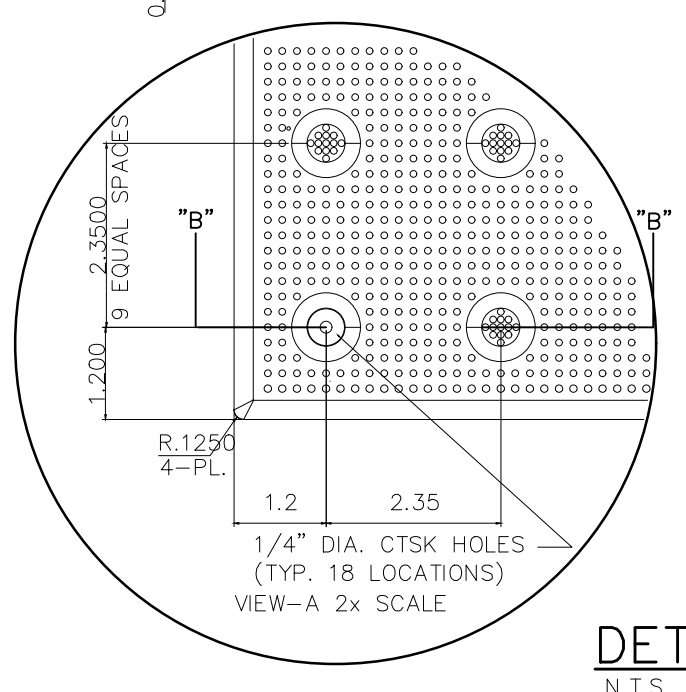
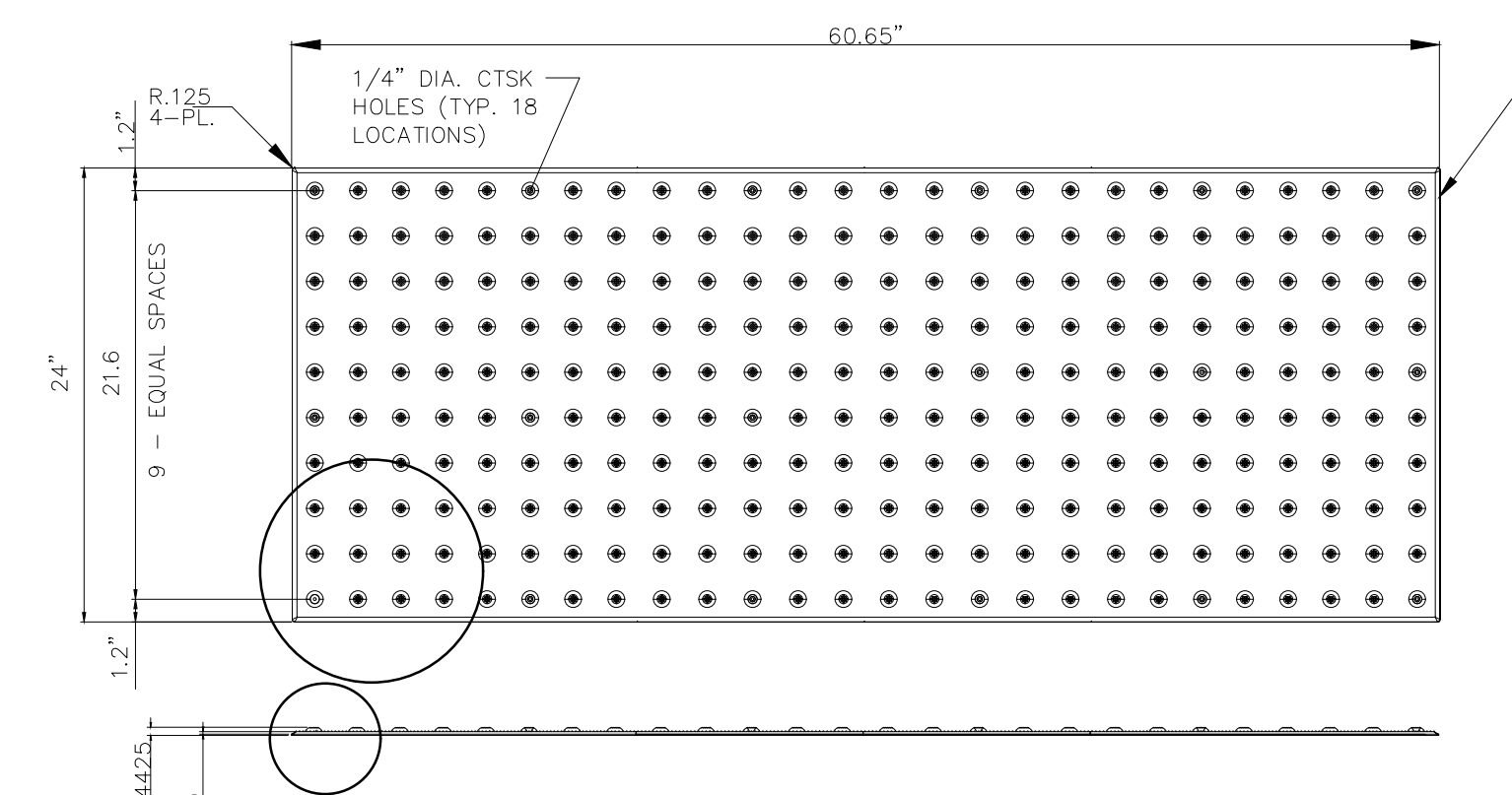
COMPACTED DRIVING SURFACE AGGREGATE
N.T.S.



COMPACTED TRAIL AGGREGATE
N.T.S.



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



DETECTABLE WARNING SURFACE
N.T.S.

REVISIONS

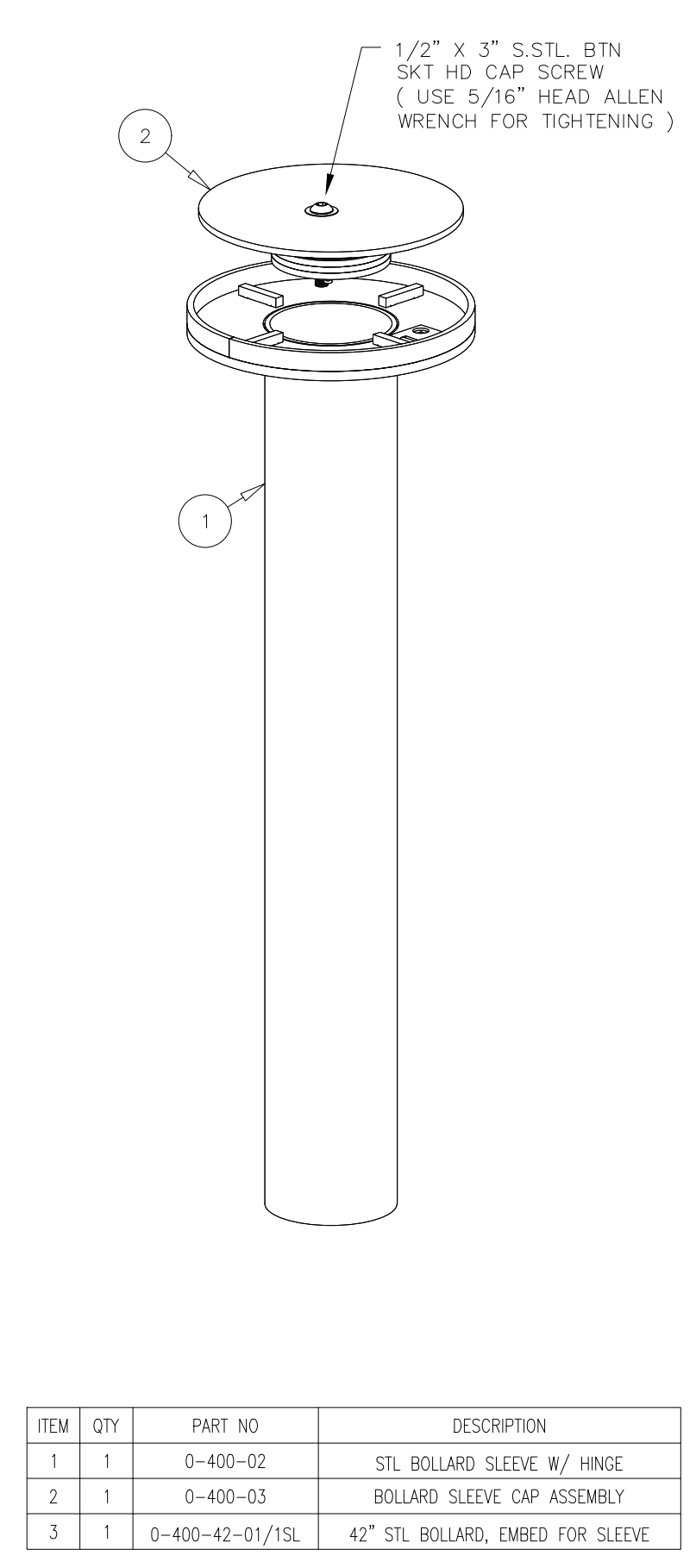
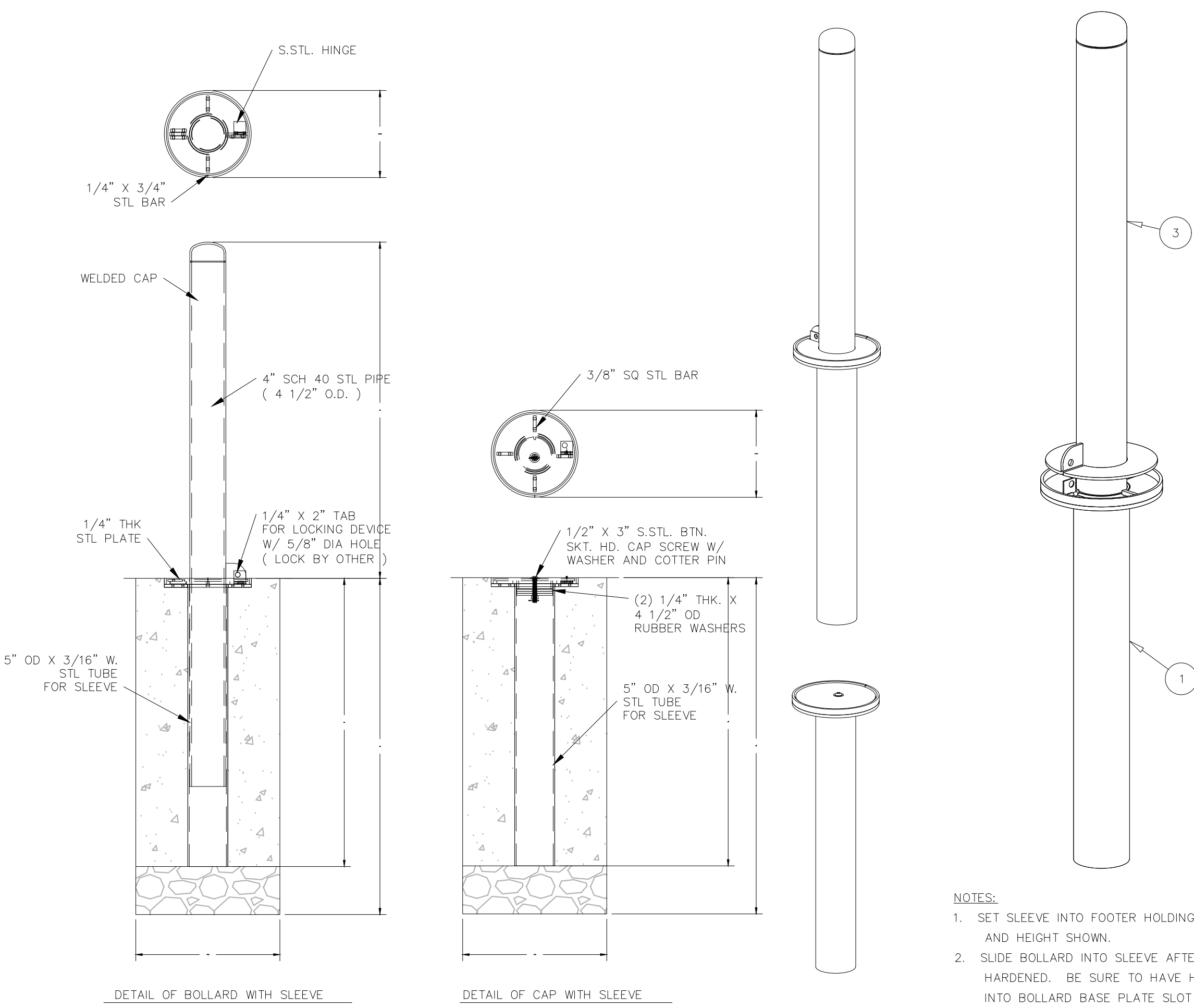
SYM	DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1	
10/02/19	TWP. SUBMISSION 2	

SUBMISSIONS

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

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

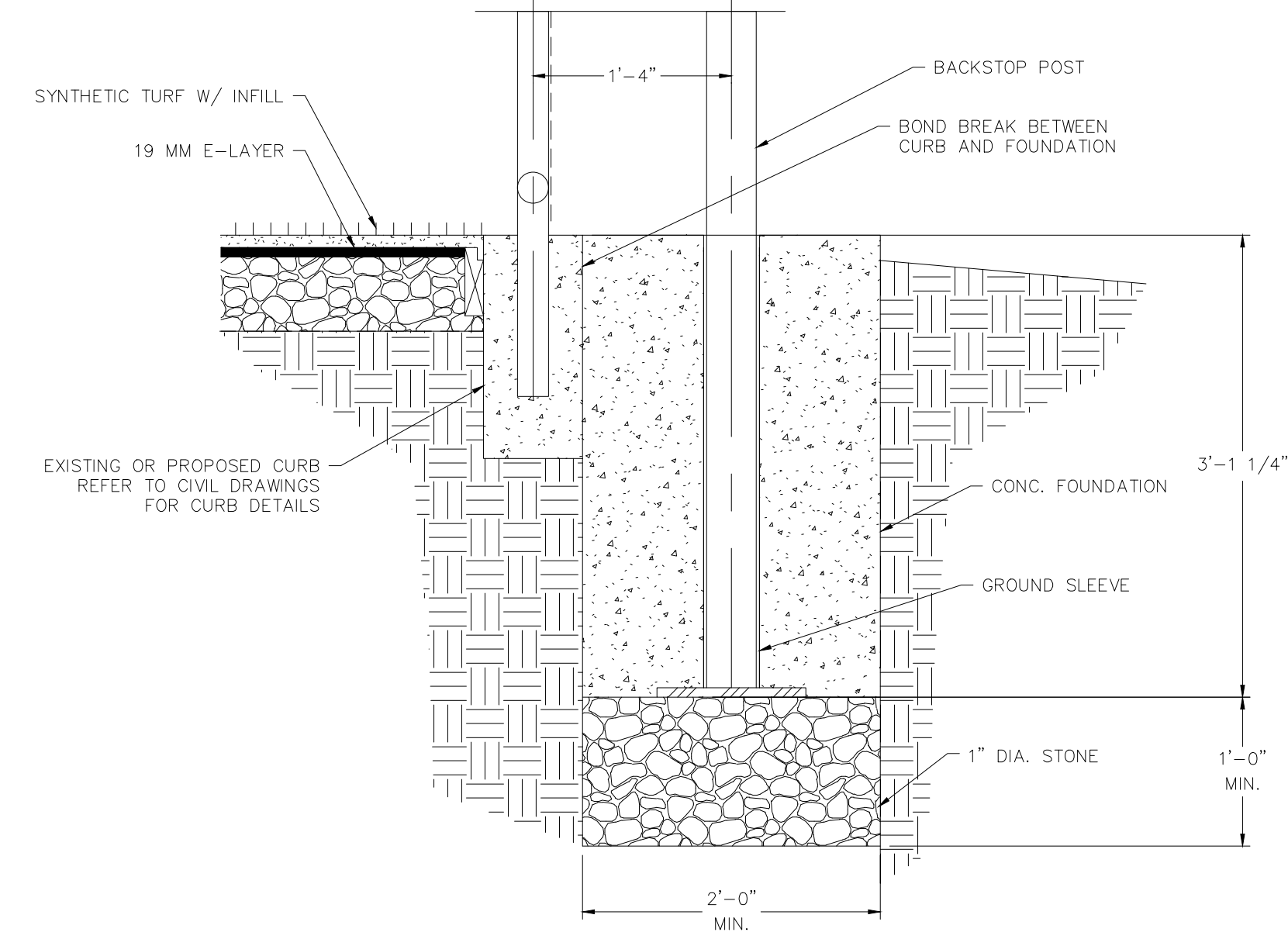


ITEM	QTY	PART NO.	DESCRIPTION
1	1	0-400-02	STL BOLLARD SLEEVE W/ HINGE
2	1	0-400-03	BOLLARD SLEEVE CAP ASSEMBLY
3	1	0-400-42-01/SSL	42\"/>

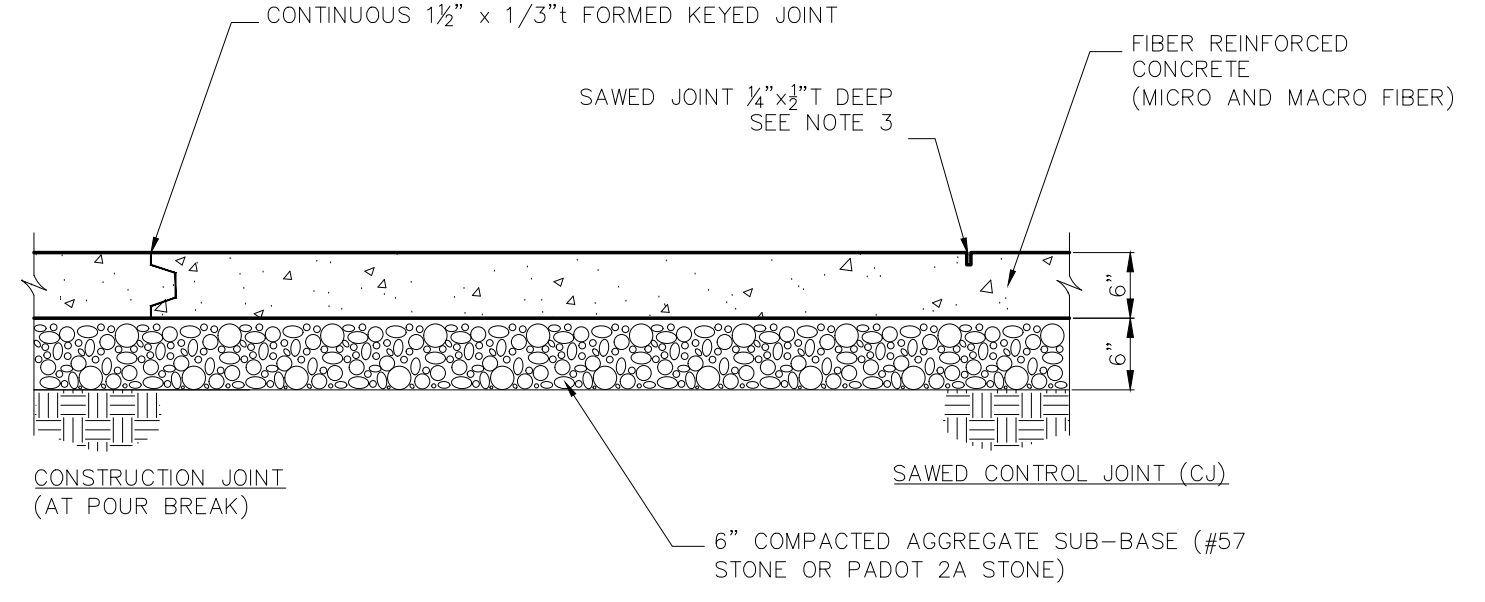
- NOTES:**
1. SET SLEEVE INTO FOOTER HOLDING PLUM, SQUARE AND HEIGHT SHOWN.
 2. SLIDE BOLLARD INTO SLEEVE AFTER CONCRETE HAS HARDENED. BE SURE TO HAVE HINGE TAB SLIDE INTO BOLLARD BASE PLATE SLOT FOR LOCKING.
 3. FOR USE OF CAP, WHEN BOLLARD IS REMOVED, PLACE CAP INTO SLEEVE. TIGHTEN CAP BY USING 1/2\"/>

- NOTES**
- 1.) STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
 - 2.) LOCKING DEVICE PROVIDED BY OTHER.

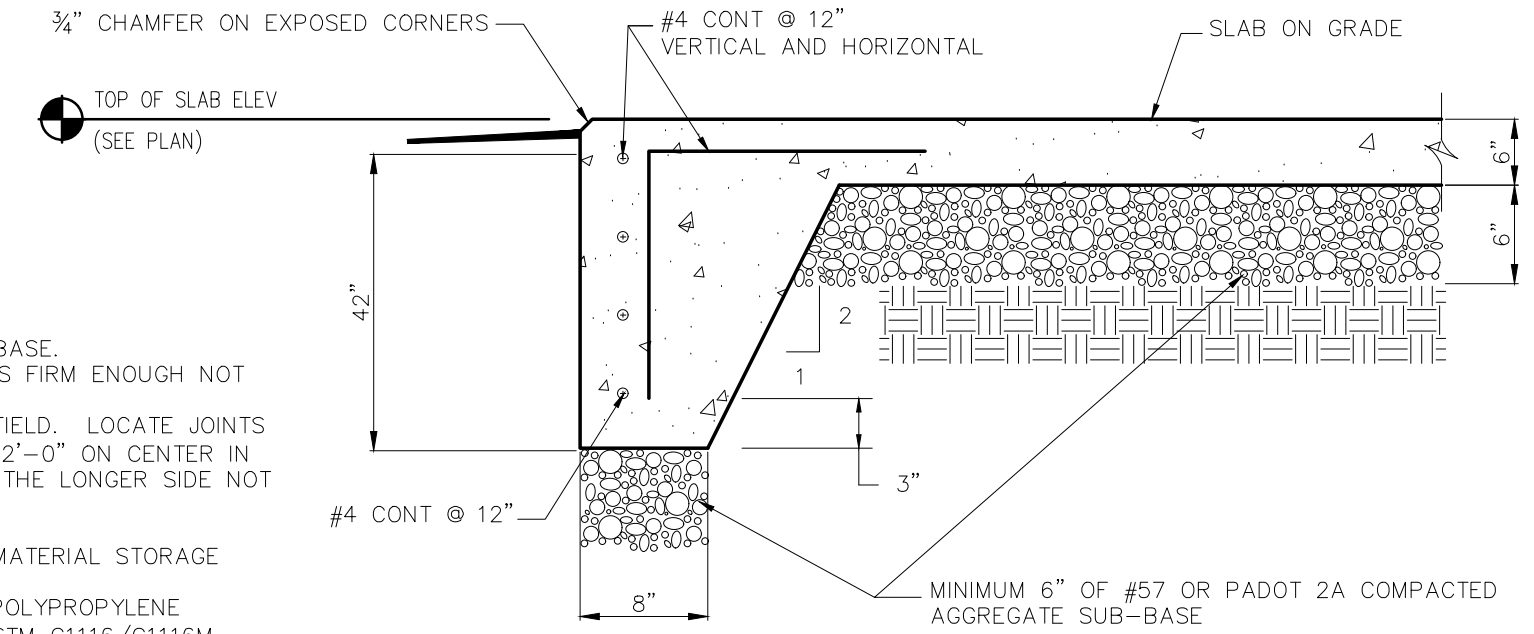
REMOVABLE BOLLARD
 N.T.S.



SAFETY NET FOUNDATION DETAIL
 N.T.S.



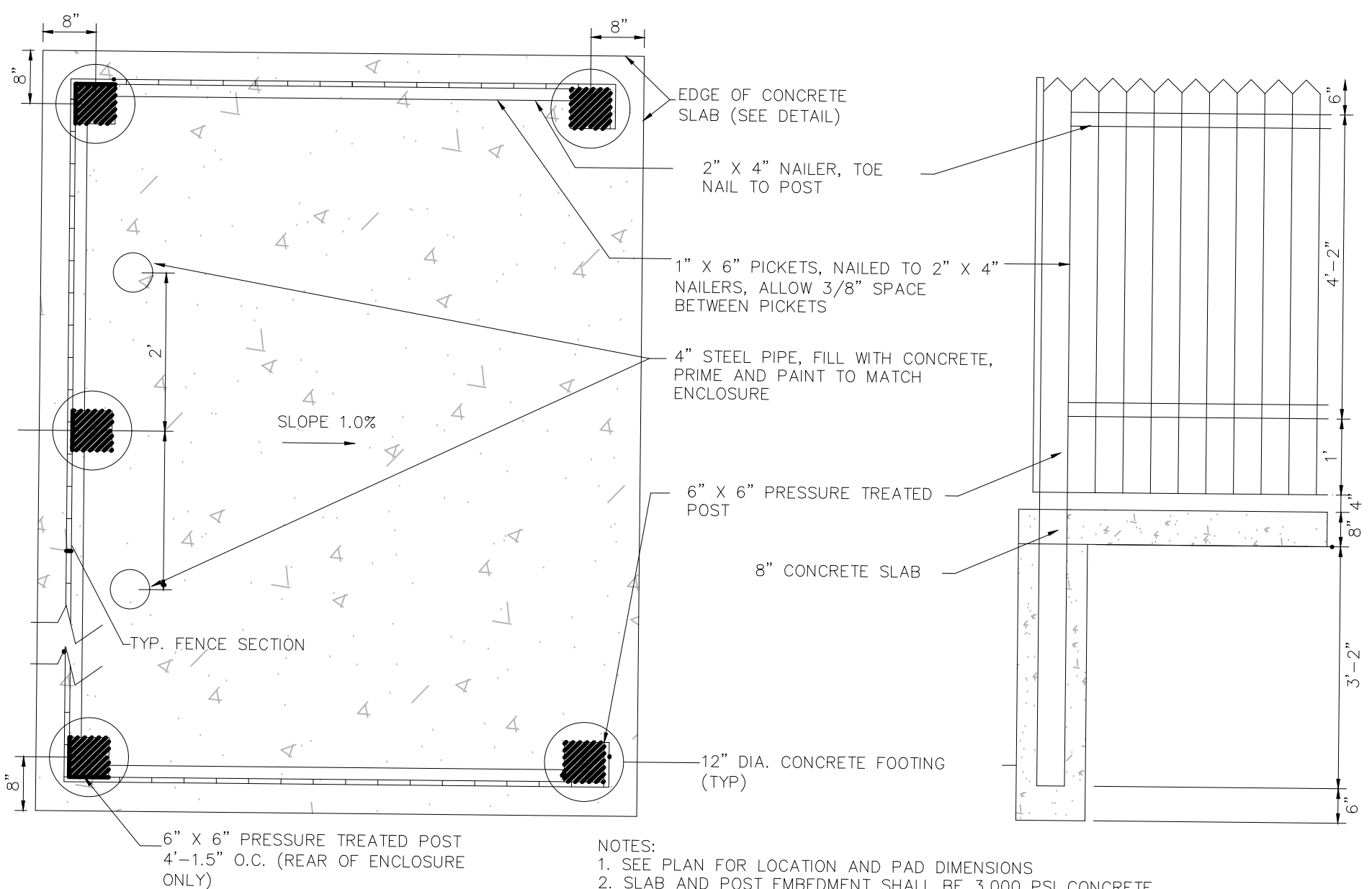
SLAB-ON-GRADE DETAIL
 N.T.S.



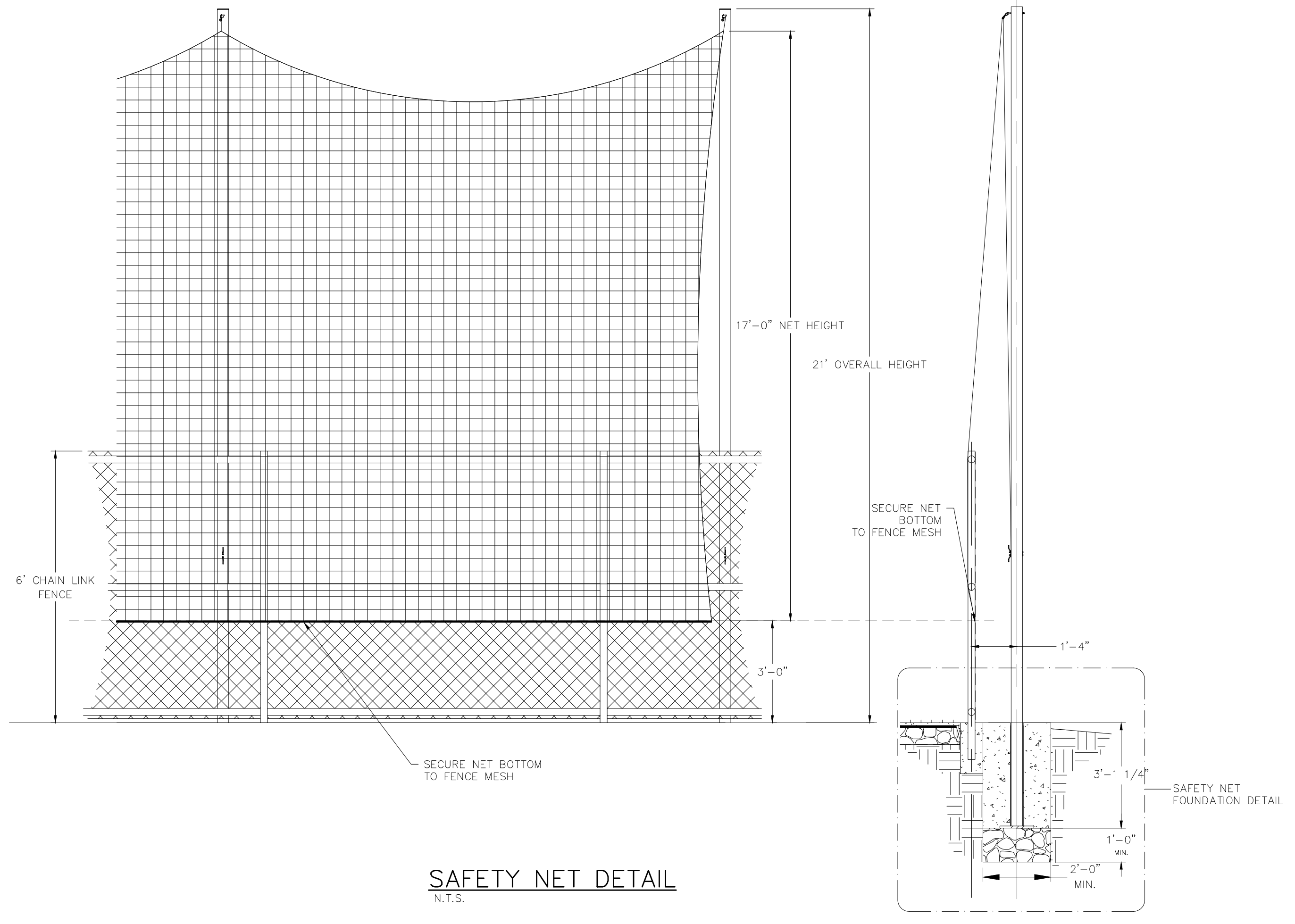
SLAB-ON-GRADE PERIMETER TURN-DOWN DETAIL
 N.T.S.

- NOTES:**
1. SLAB IS 6\"/>

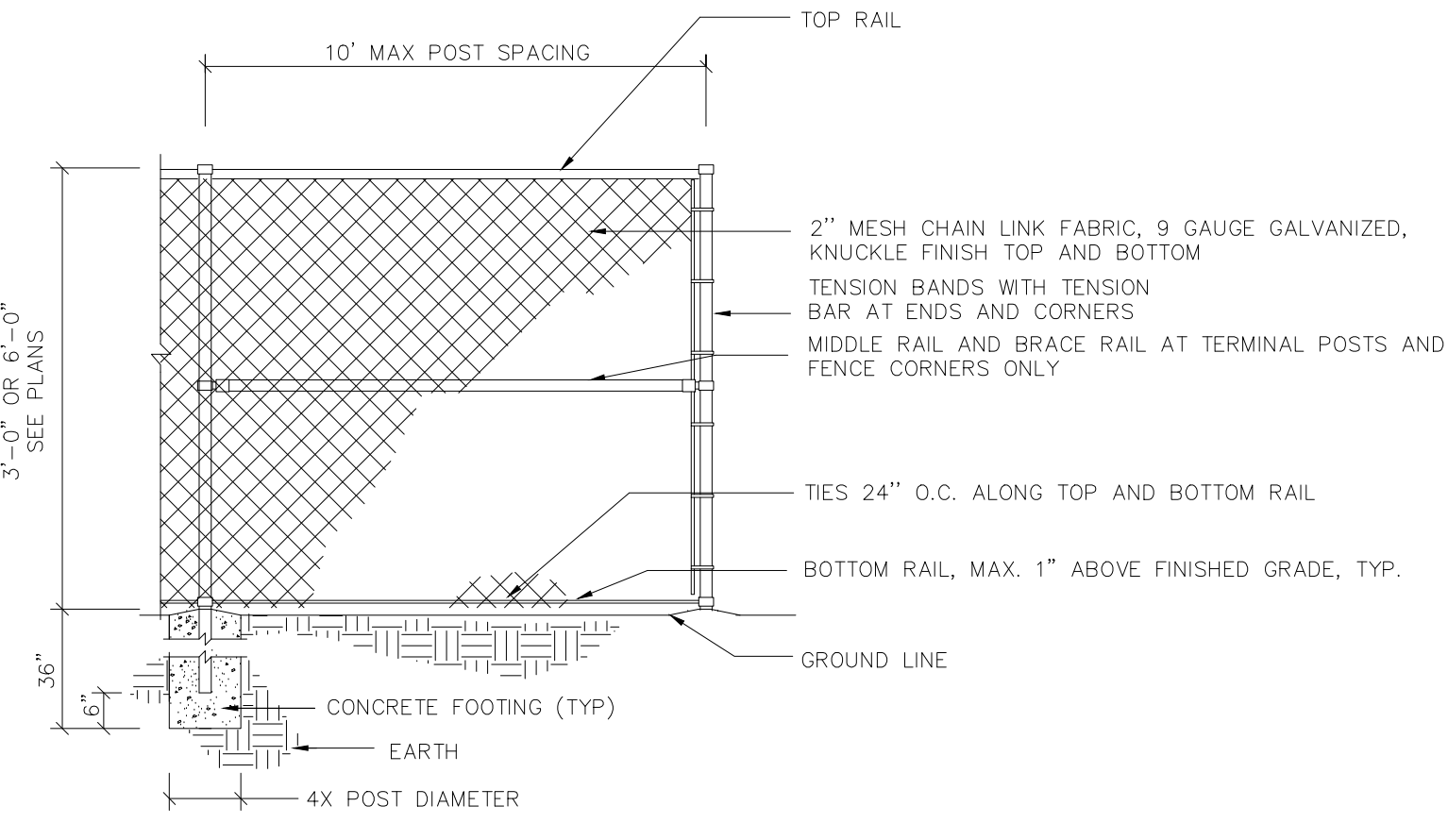
TYPICAL CONCRETE PAD
 N.T.S.



DUMPSTER SCREEN DETAIL
 N.T.S.



SAFETY NET DETAIL
 N.T.S.

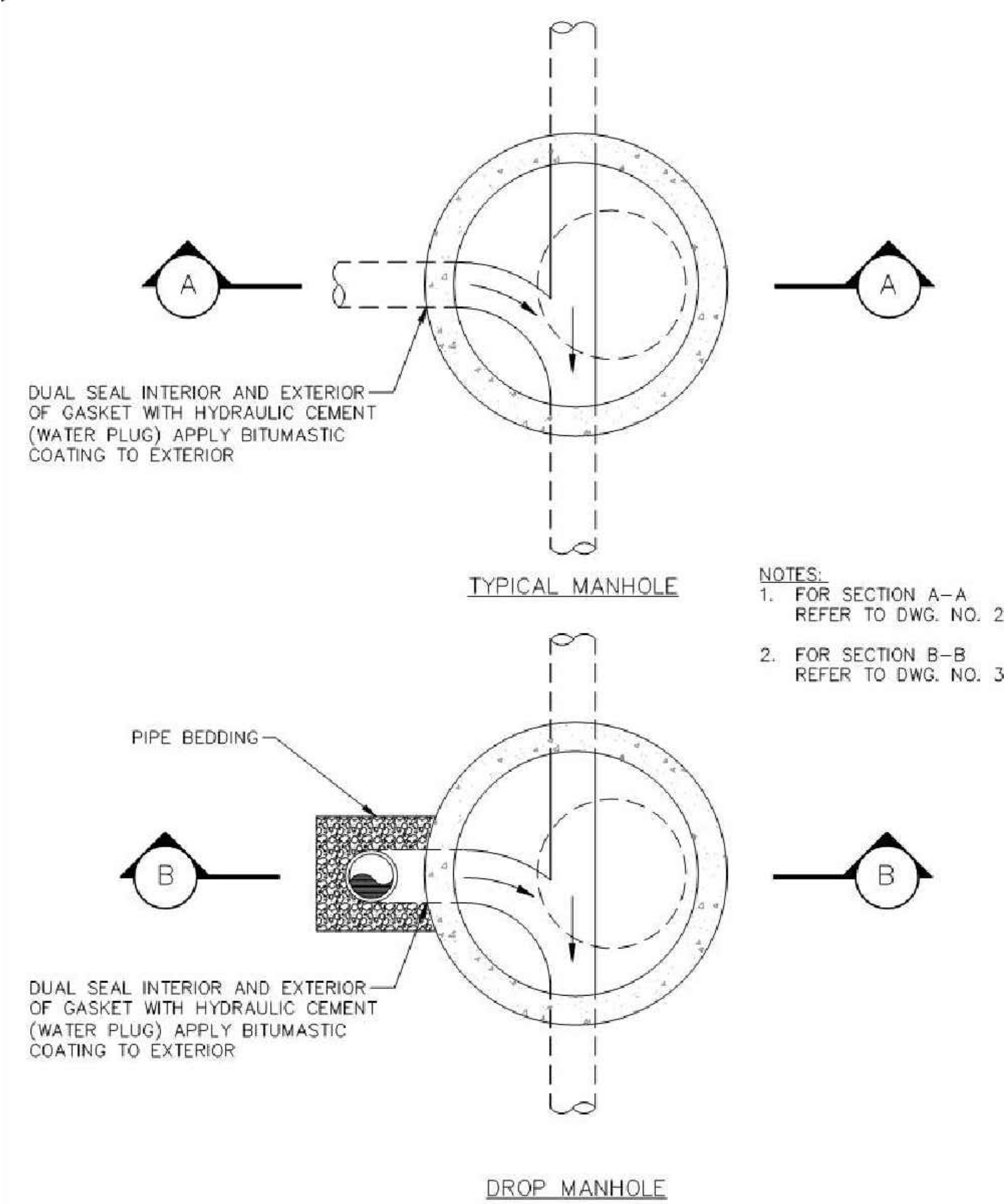


PIPE SIZES FOR VARIOUS FENCE MEMBERS

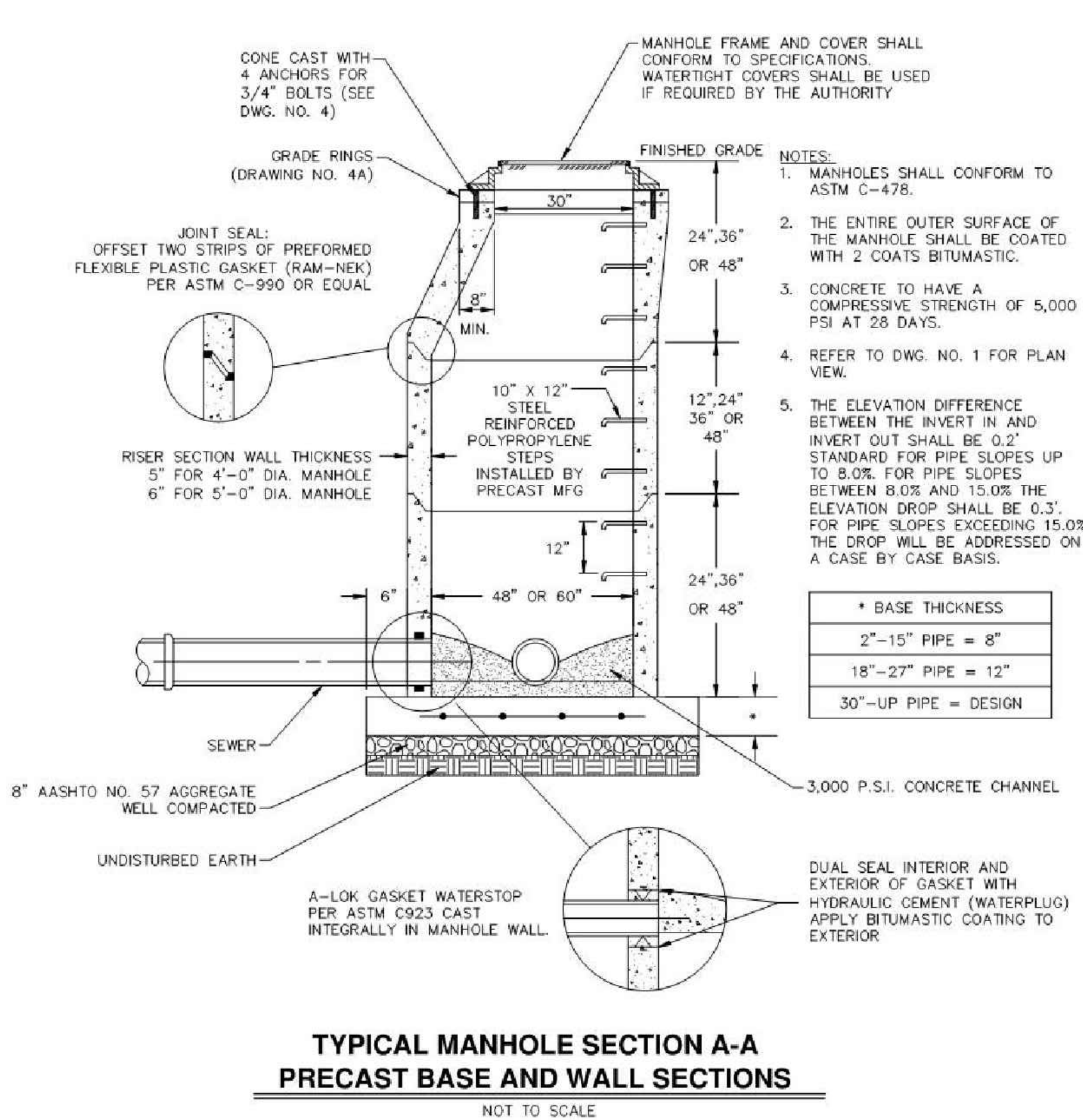
HEIGHT	CORNER POST	LINE POST	TOP RAIL	MIDDLE RAIL	BRACE RAIL	BOTTOM RAIL	FOOTING DEPTH
≤6'	2 1/2"	2"	1 5/8"	1 5/8"	1 5/8"	1 5/8"	36"
10'	3"	2 1/2"	1 5/8"	1 5/8"	1 5/8"	1 5/8"	36"

ALL PIPE SIZES ARE OUTSIDE DIAMETER, TYPE 1 SCHEDULE 40

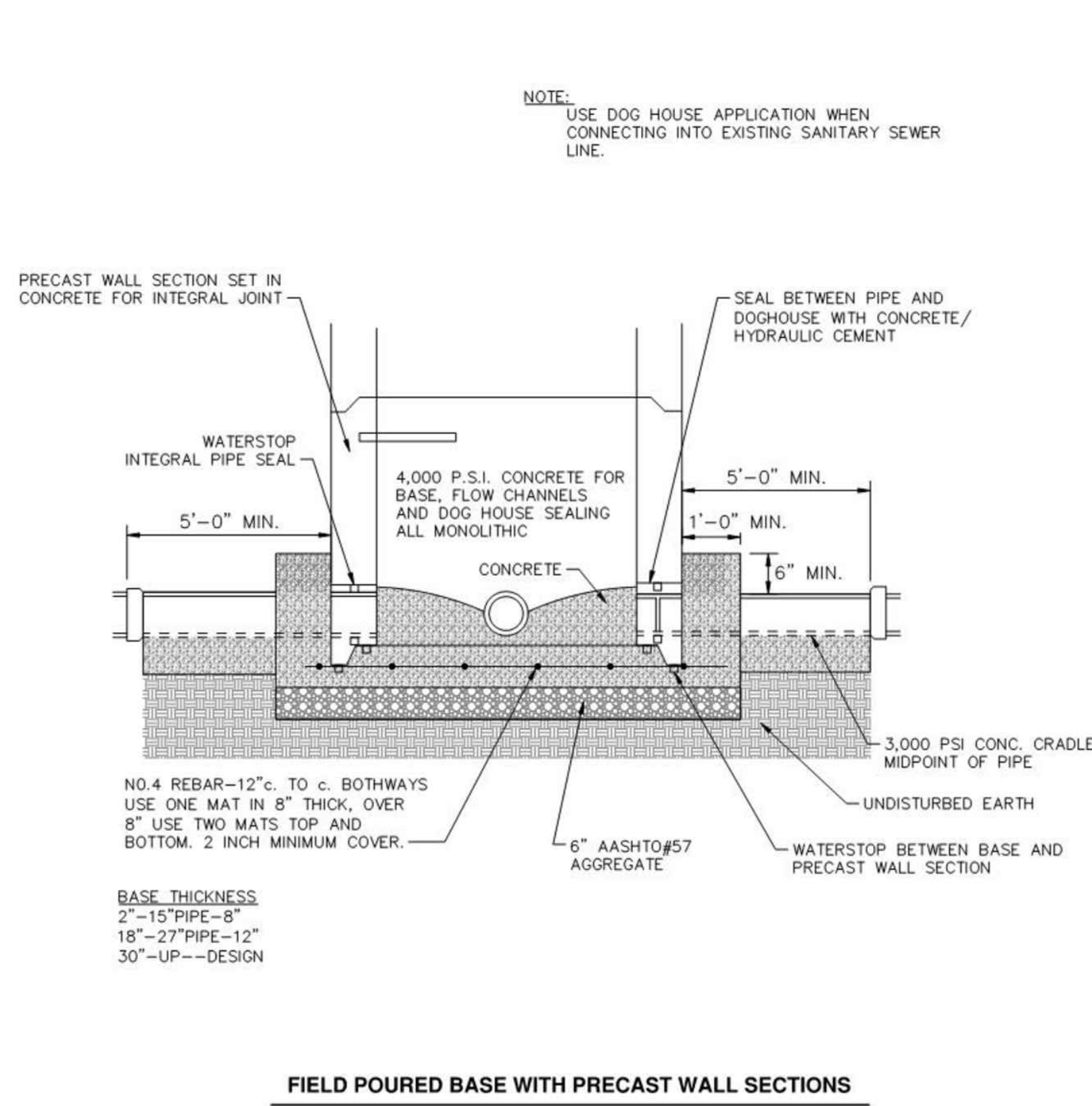
CHAIN LINK FENCE
 N.T.S.



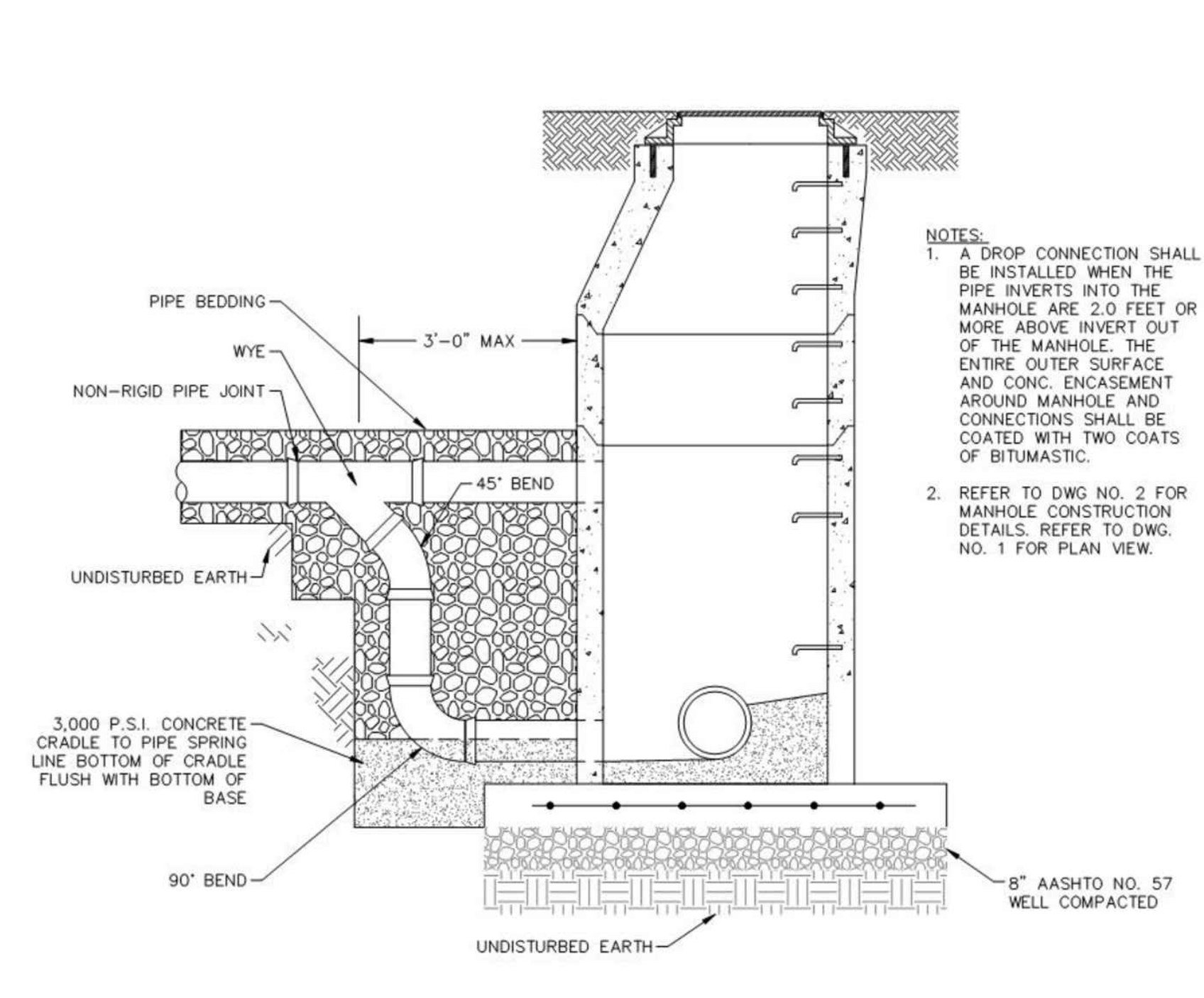
SECTIONAL PLAN VIEW OF TYPICAL AND DROP MANHOLES
NOT TO SCALE



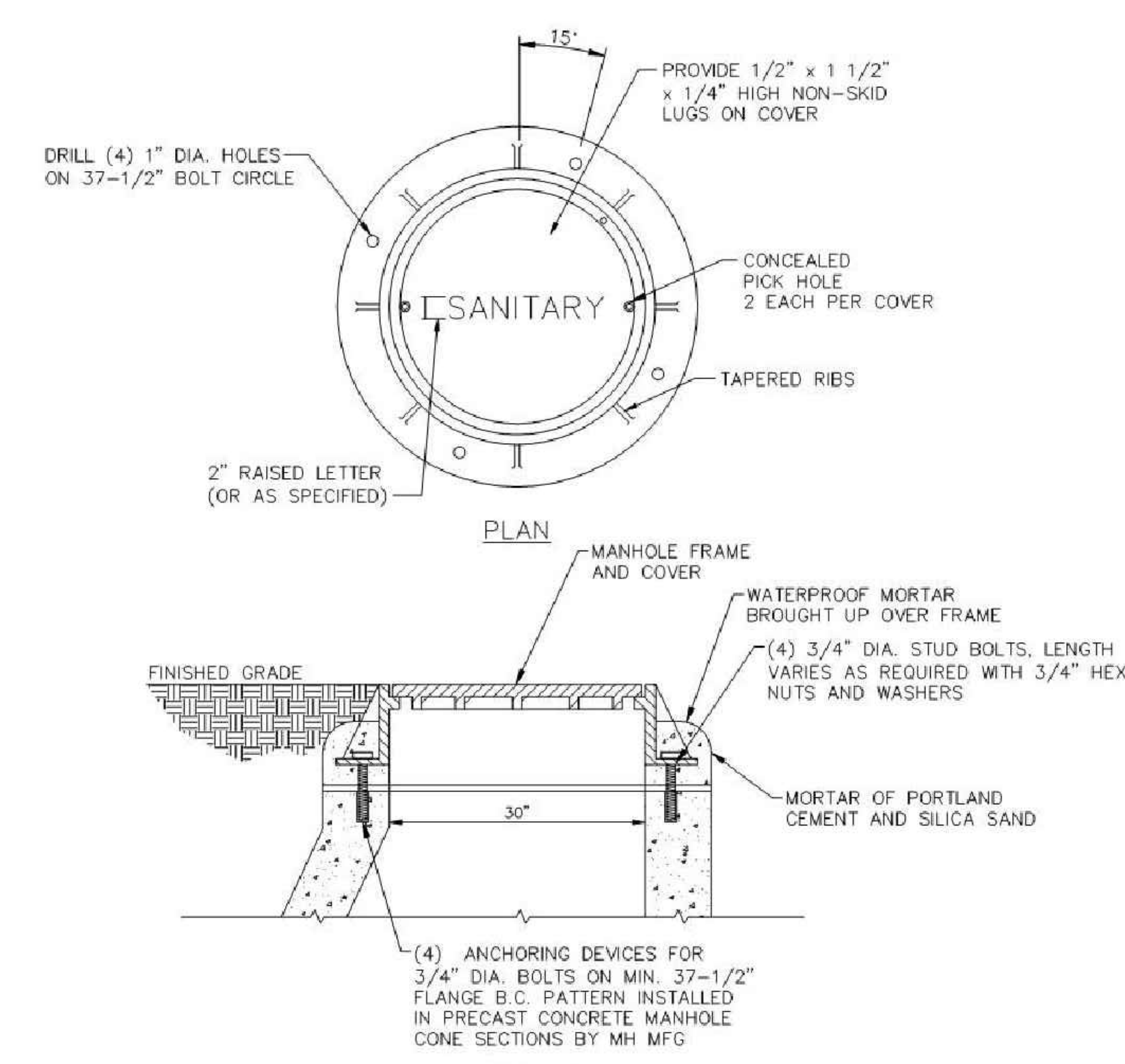
**TYPICAL MANHOLE SECTION A-A
PRECAST BASE AND WALL SECTIONS**
NOT TO SCALE



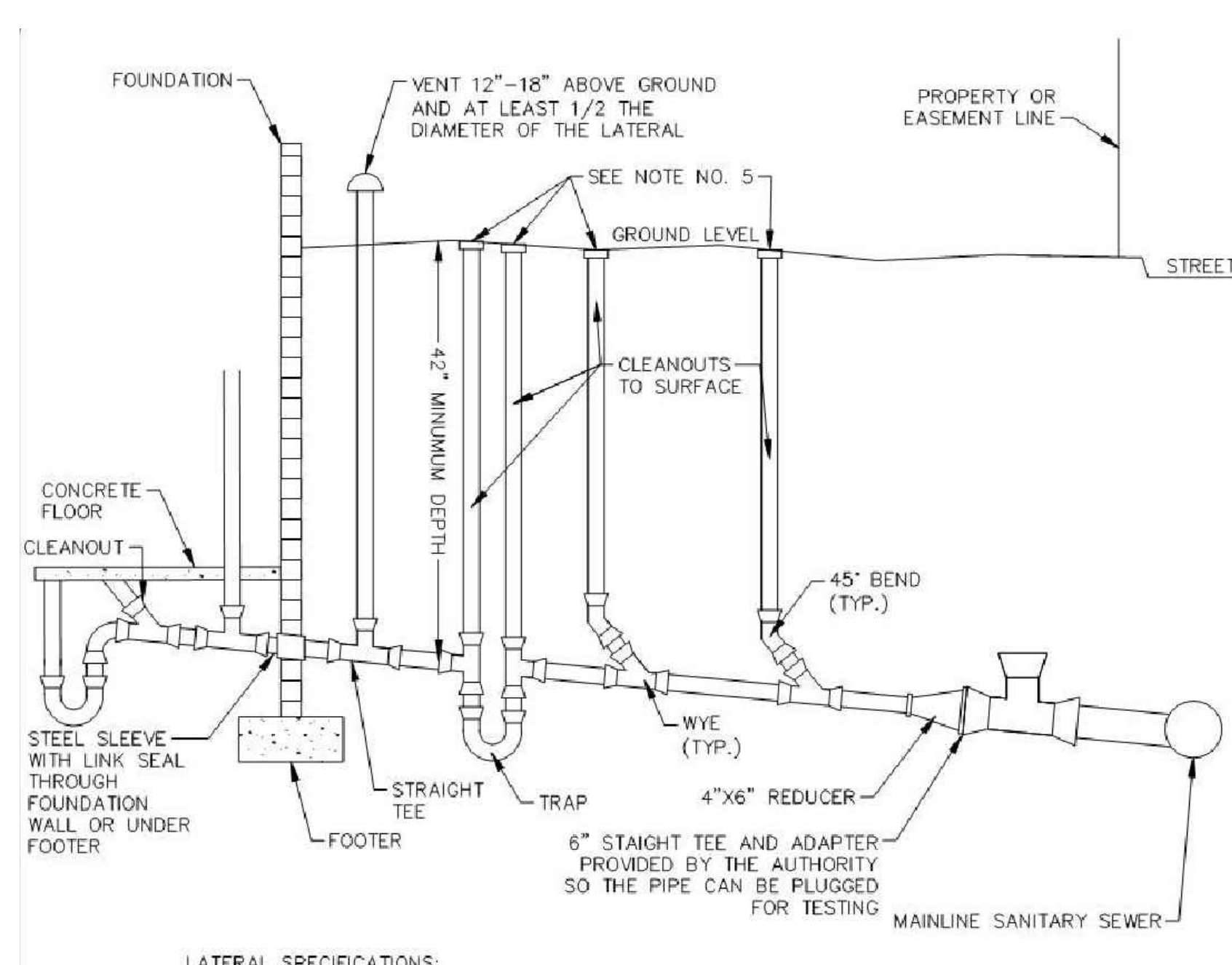
FIELD Poured BASE WITH PRECAST WALL SECTIONS



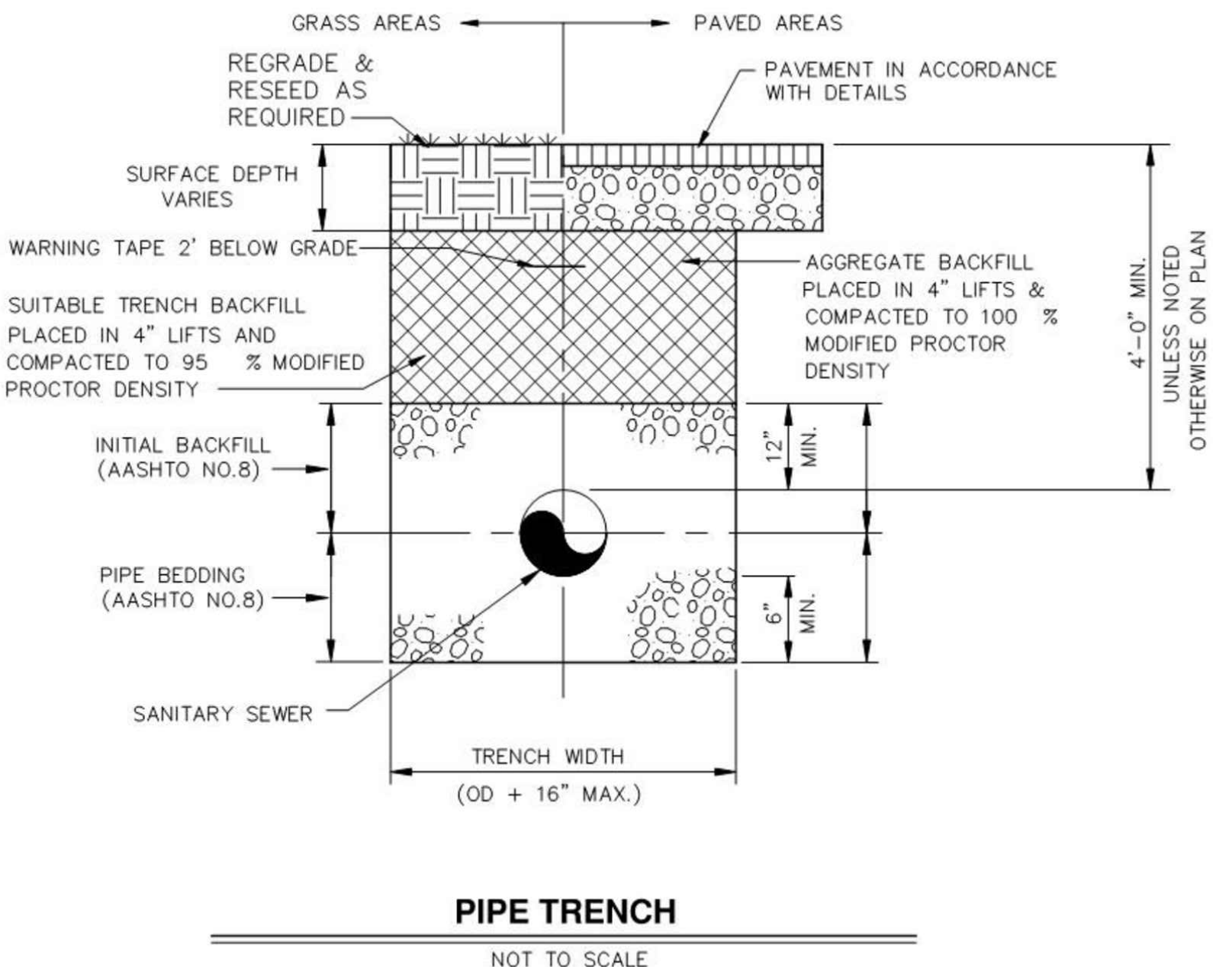
**TYPICAL DROP MANHOLE SECTION B-B
PRECAST BASE AND WALL SECTIONS**
NOT TO SCALE



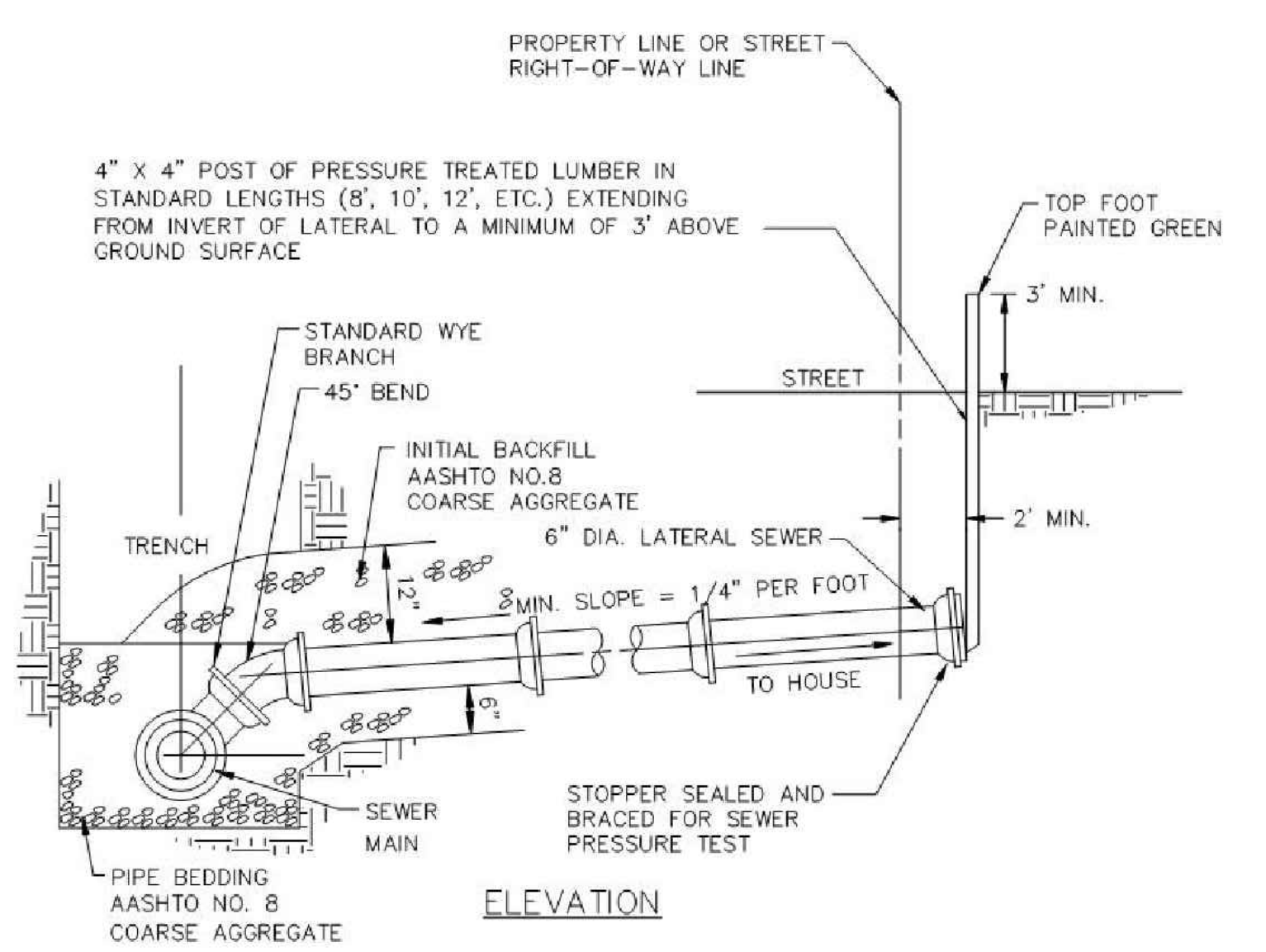
**MANHOLE FRAME AND COVER INSTALLATION
FOR PRECAST CONCRETE MANHOLES**
NOT TO SCALE



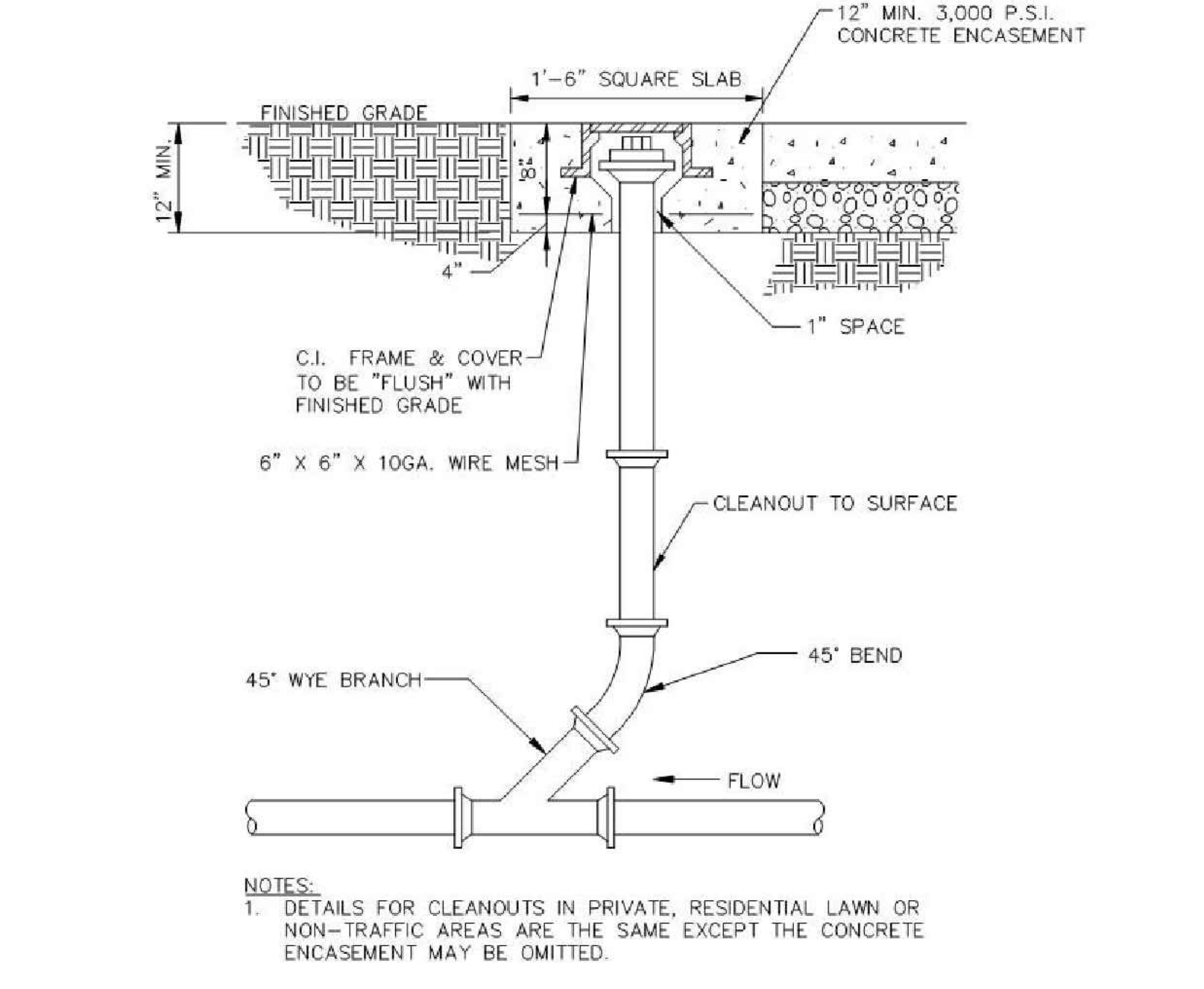
TYPICAL SANITARY SEWER LATERAL
NOT TO SCALE



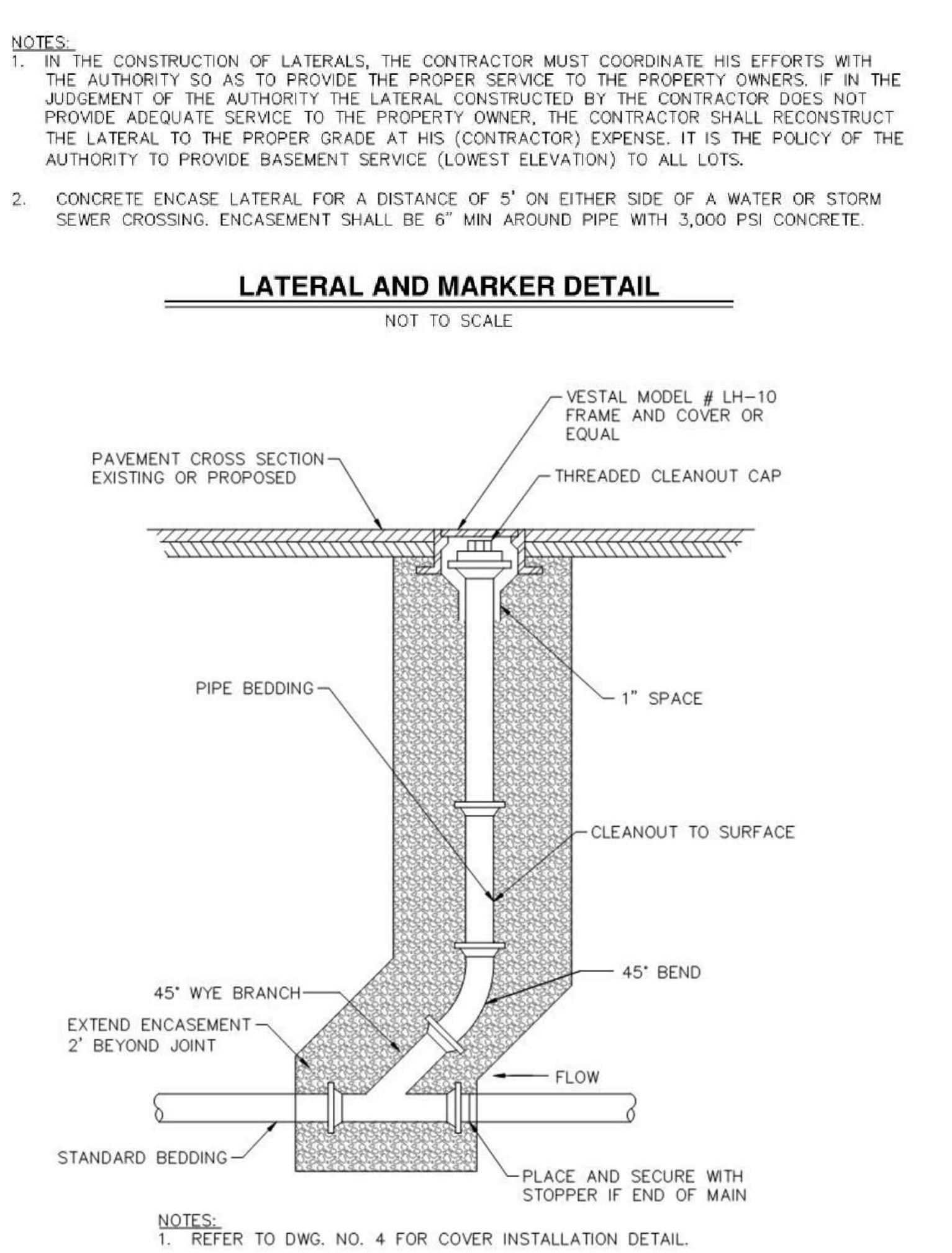
PIPE TRENCH
NOT TO SCALE



LATERAL AND MARKER DETAIL
NOT TO SCALE



**CLEANOUT CONSTRUCTION DETAIL FOR PRIVATE
COLLECTION SYSTEM**
NOT TO SCALE



**CLEANOUT CONSTRUCTION DETAIL FOR PAVED
AREAS**

REVISIONS

SYM	DATE	DESCRIPTION

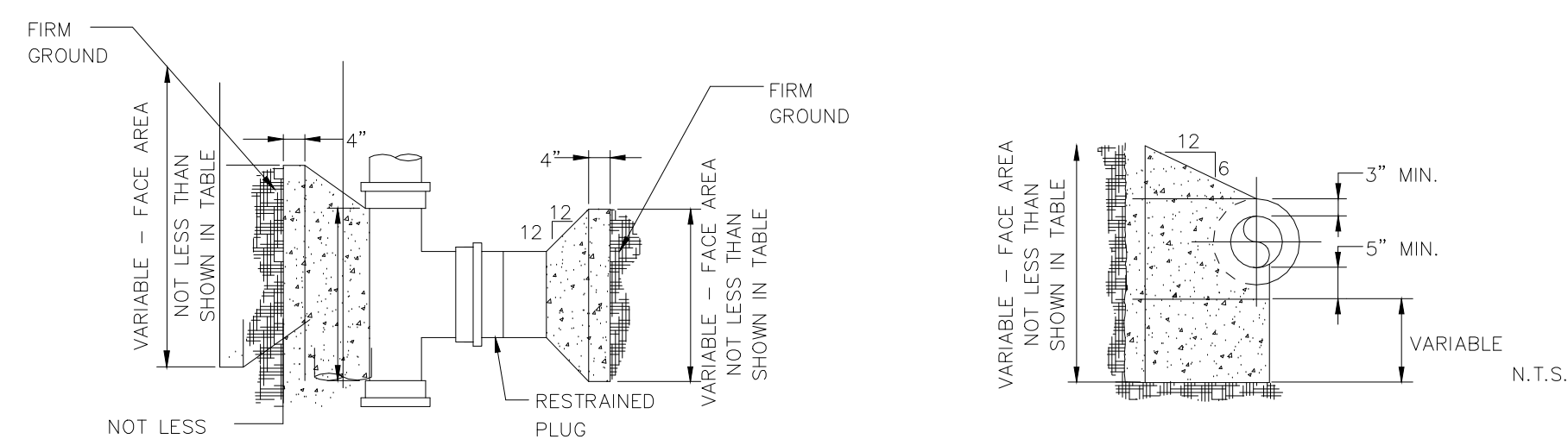
SUBMISSIONS

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

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

<PRELIMINARY
NOT FOR
CONSTRUCTION>

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

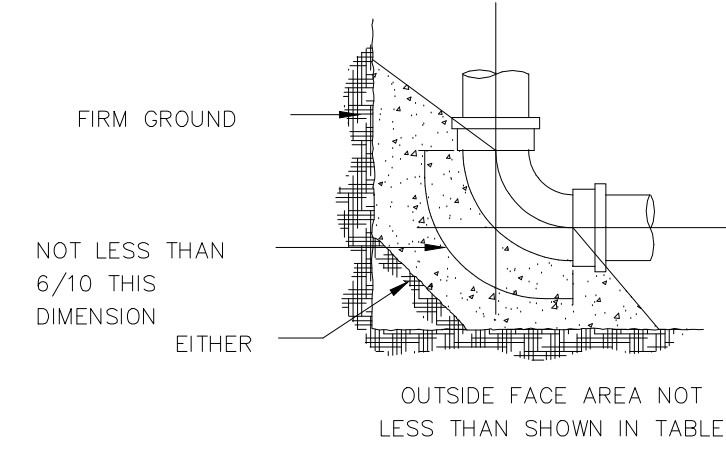


BLOCKING FOR TEES AND PLUGS
N.T.S.

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 COMPRESSIVE STRENGTH OF 4,000 PSI.

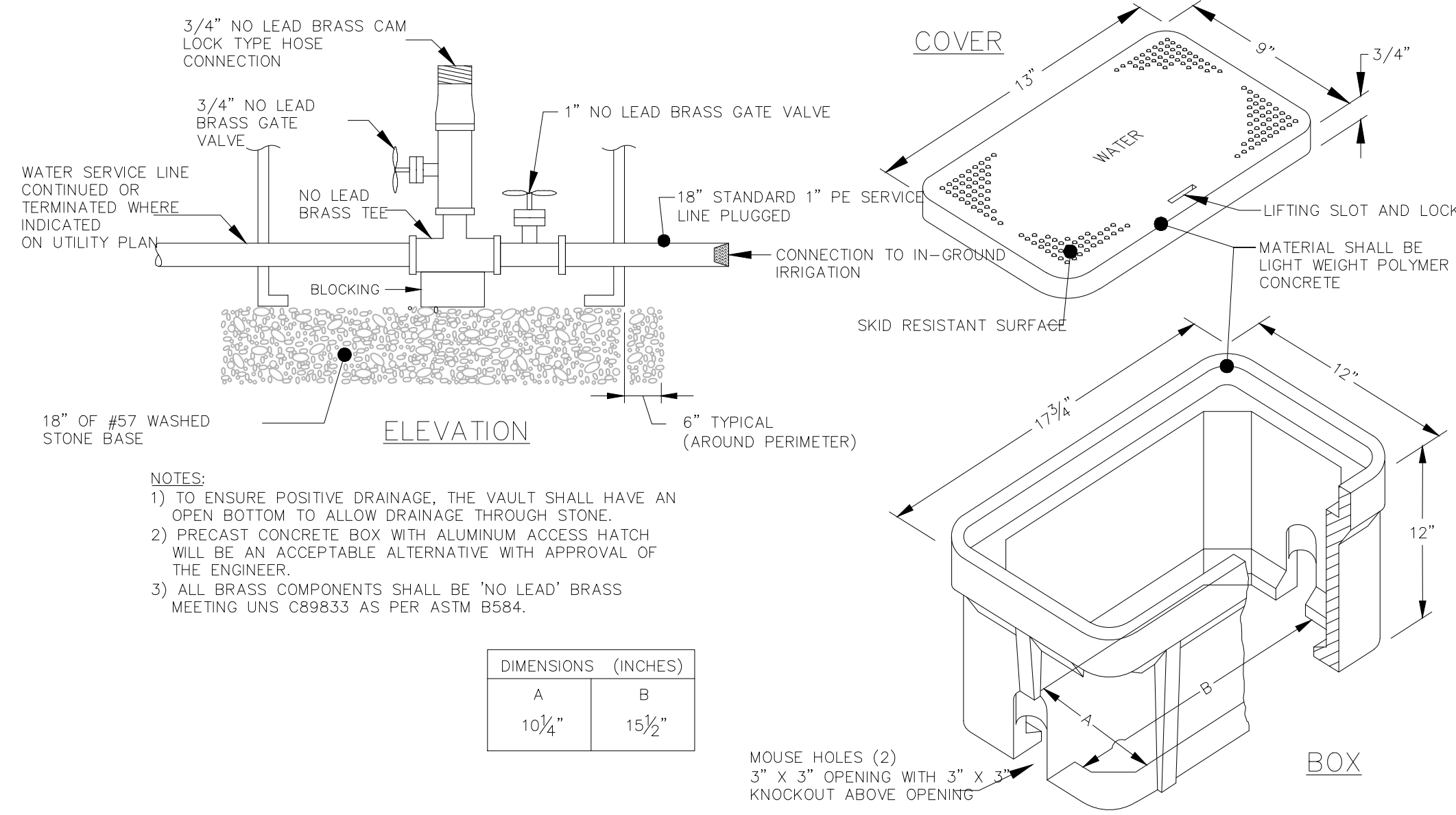
APPLICABLE TO TEES, WYES, AND BENDS
N.T.S.



BLOCKING FOR BENDS
N.T.S.

PIPE SIZE (IN.)	AREA SQ. FT.	TOTAL FORCE (LBS)	AREA OF BLOCK IN SQUARE FEET				
			TEE & PLUGS	90° BENDS	45° BENDS	22½° BENDS	11½° 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

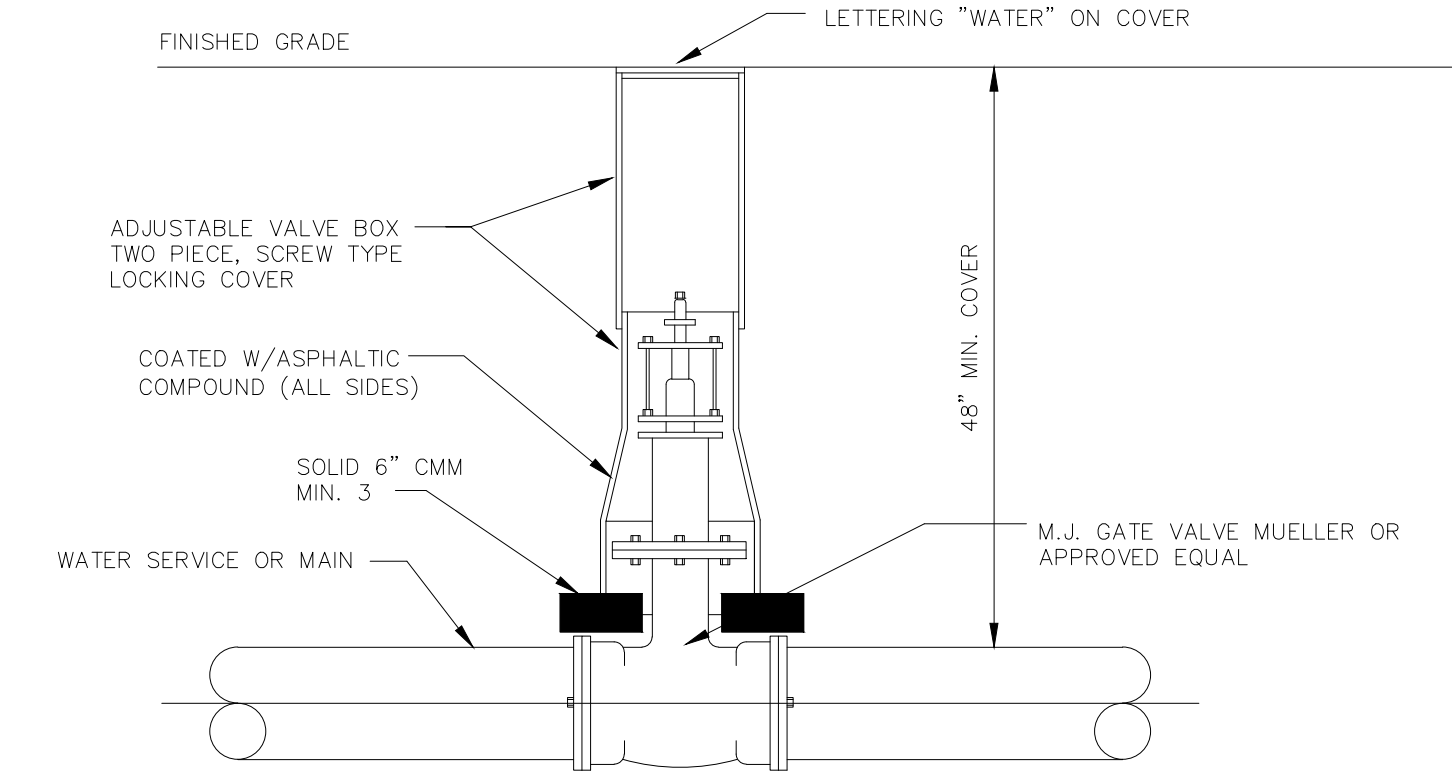
CONCRETE THRUST BLOCKS
N.T.S.



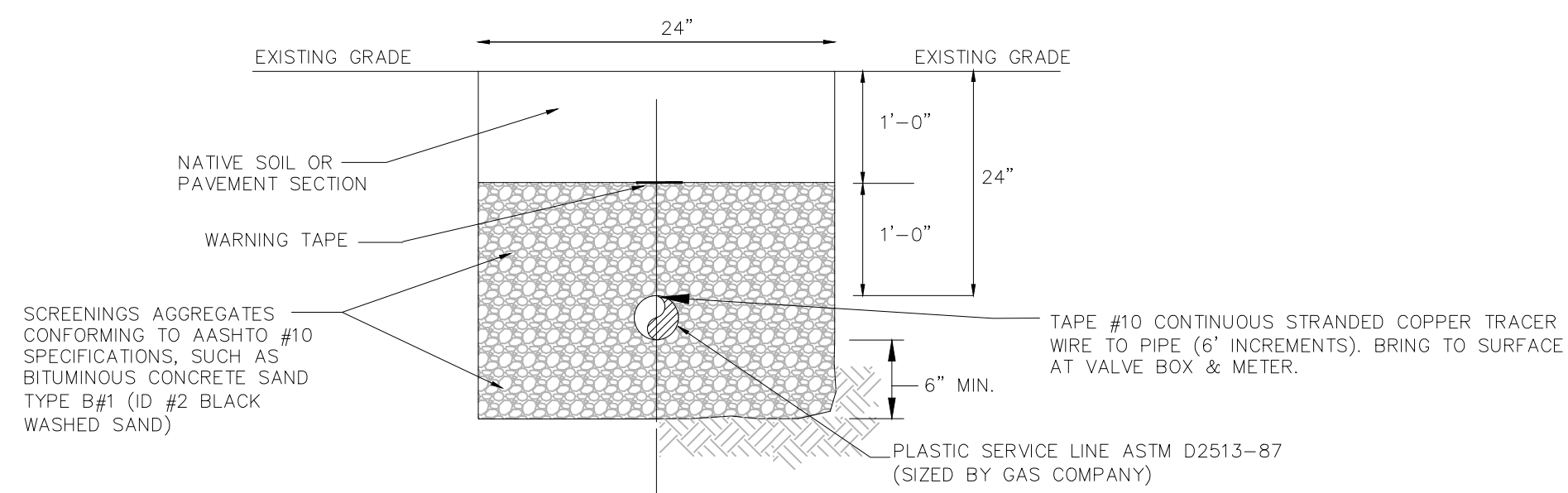
IRRIGATION HOSE BIB
N.T.S.

- 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 UNCS C89833 AS PER ASTM B584.

DIMENSIONS (INCHES)	
A	B
10 1/4"	15 1/2"

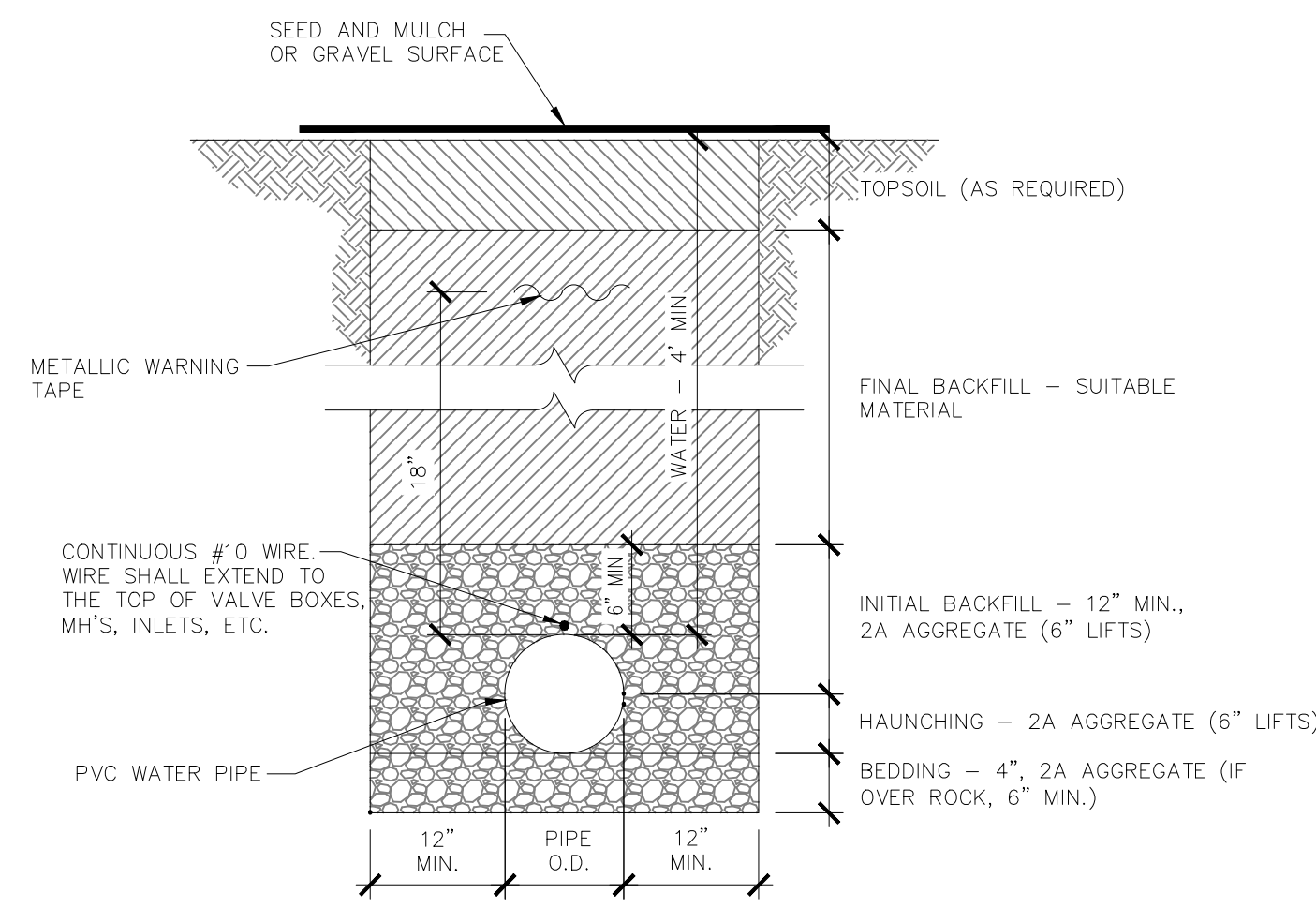


TYPICAL GATE VALVE AND VALVE BOX DETAIL
N.T.S.



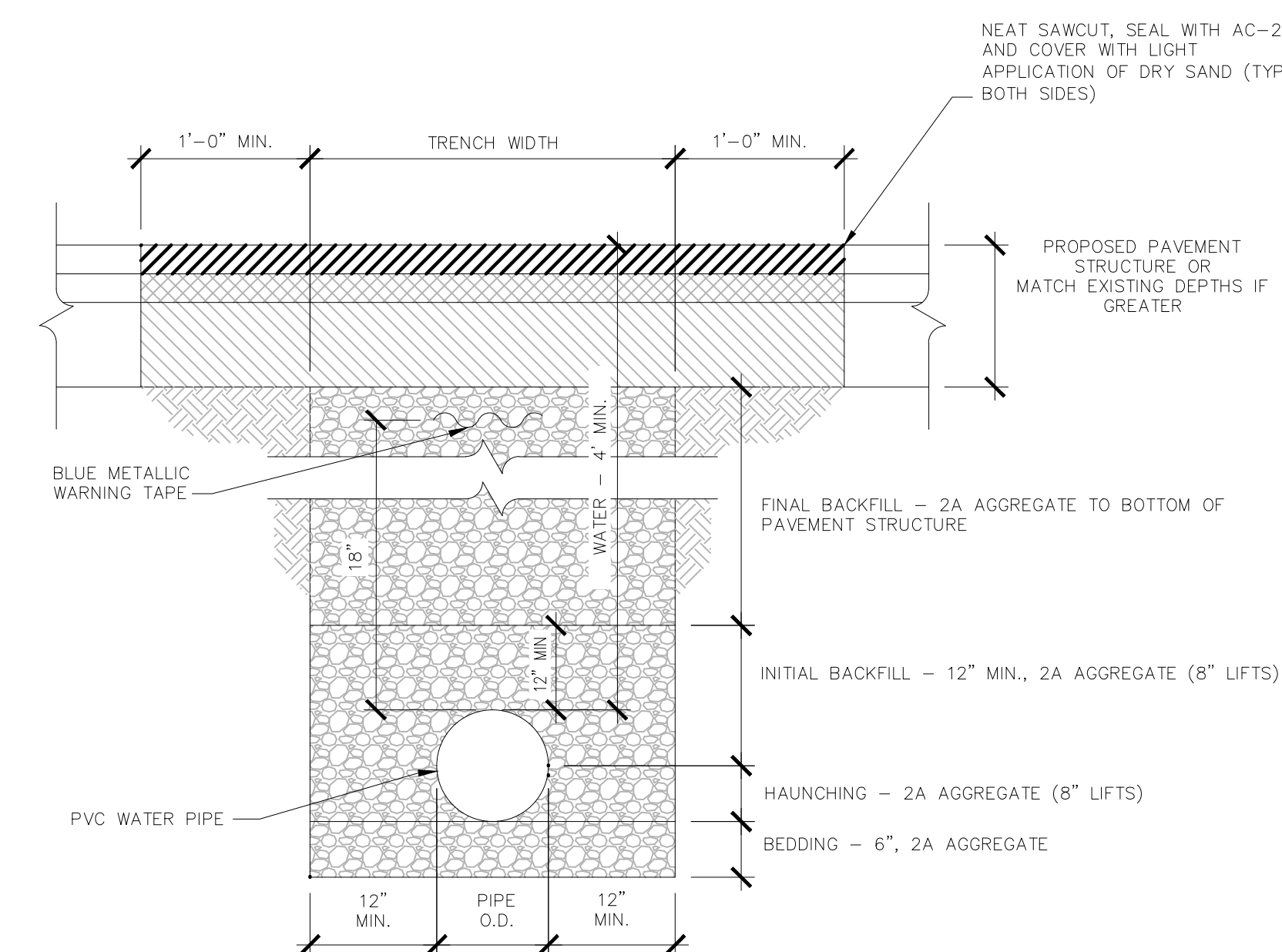
- NOTES:**
1. LOCATOR TRACER WIRE AND WARNING TAPE INSTALLED BY CONTRACTOR.
 2. 6" OF SCREENINGS AT BOTTOM OF DITCH MUST BE INSTALLED BY CONTRACTOR PRIOR TO INSTALLATION OF THE SERVICE.
 3. CONTRACTOR MUST INSTALL MINIMUM OF 12" OF SCREENINGS OVER TOP OF GAS SERVICE AT TIME OF INSTALLATION.
 4. WARNING 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. WATER LINE MAXIMUM DEPTH 8' TO CROWN OF PIPE.
 2. CLAY DIKES INSTALLED ON PIPE RUNS OVER 300' IN LENGTH.

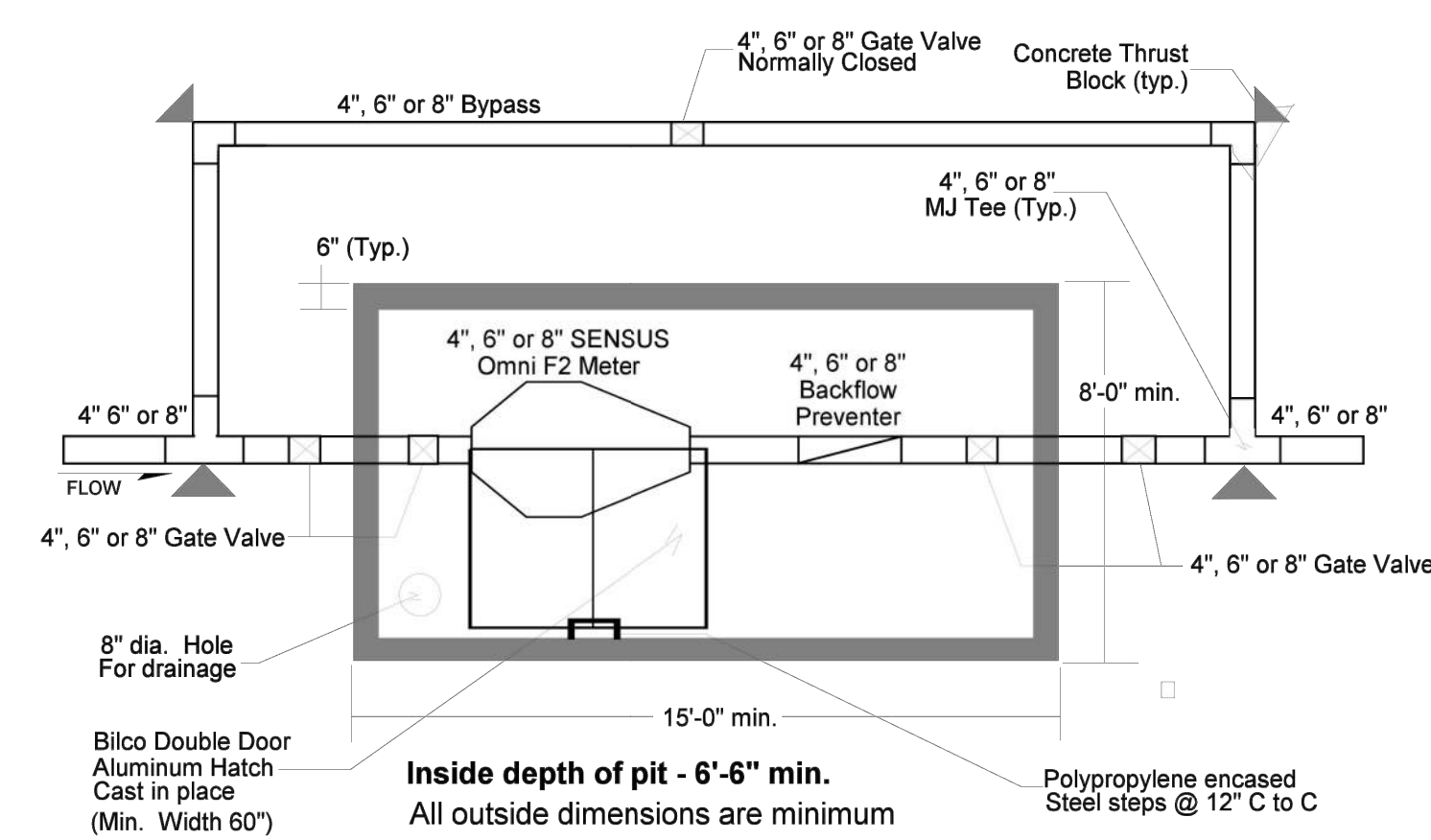
WATERLINE TRENCH IN NON-PAVED AREAS
N.T.S.



- 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.

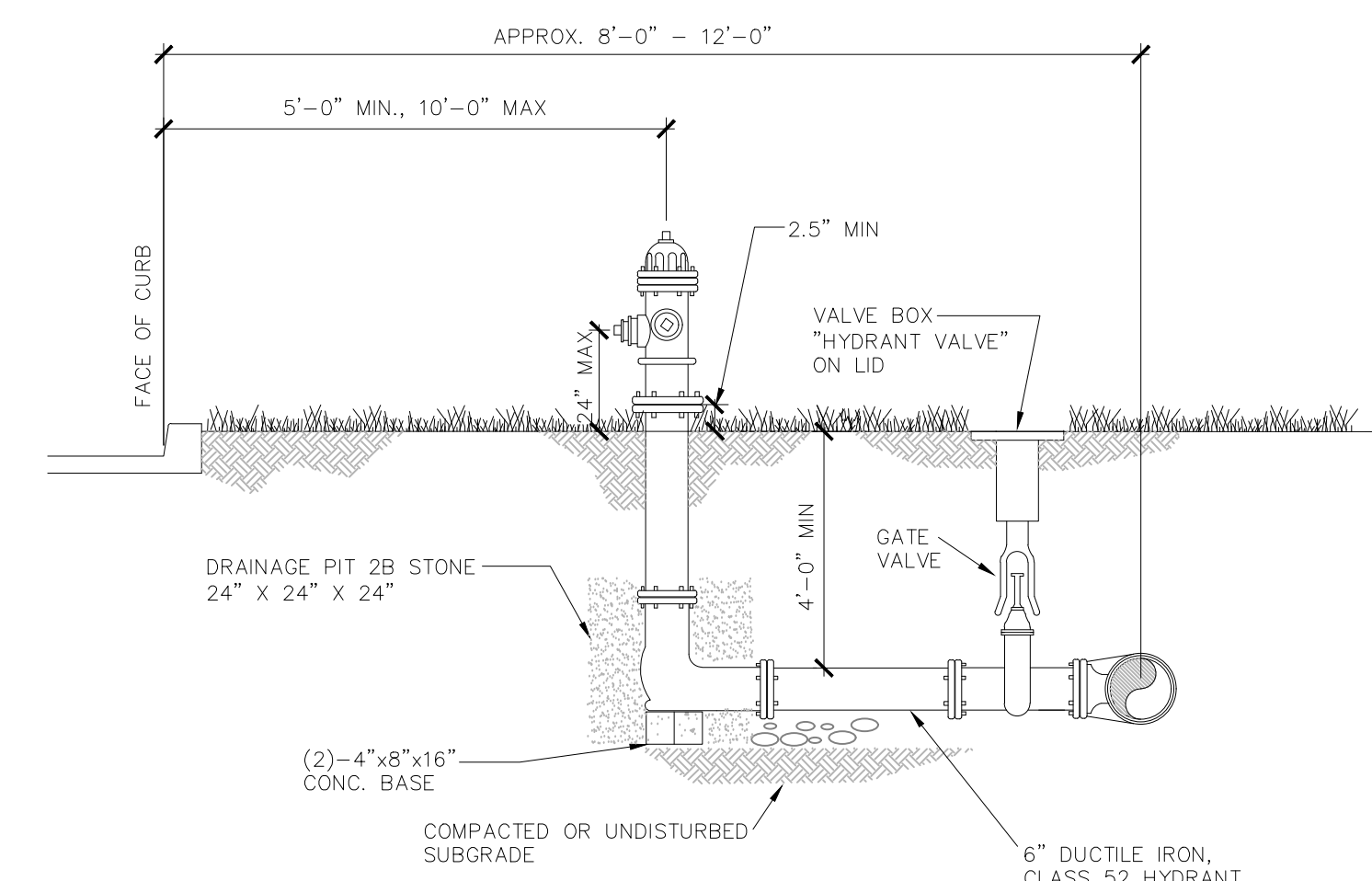
4", 6" or 8" DOMESTIC & FIRE LINE COMBINATION METER PIT- Using Omni Meter
N.T.S.



*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.

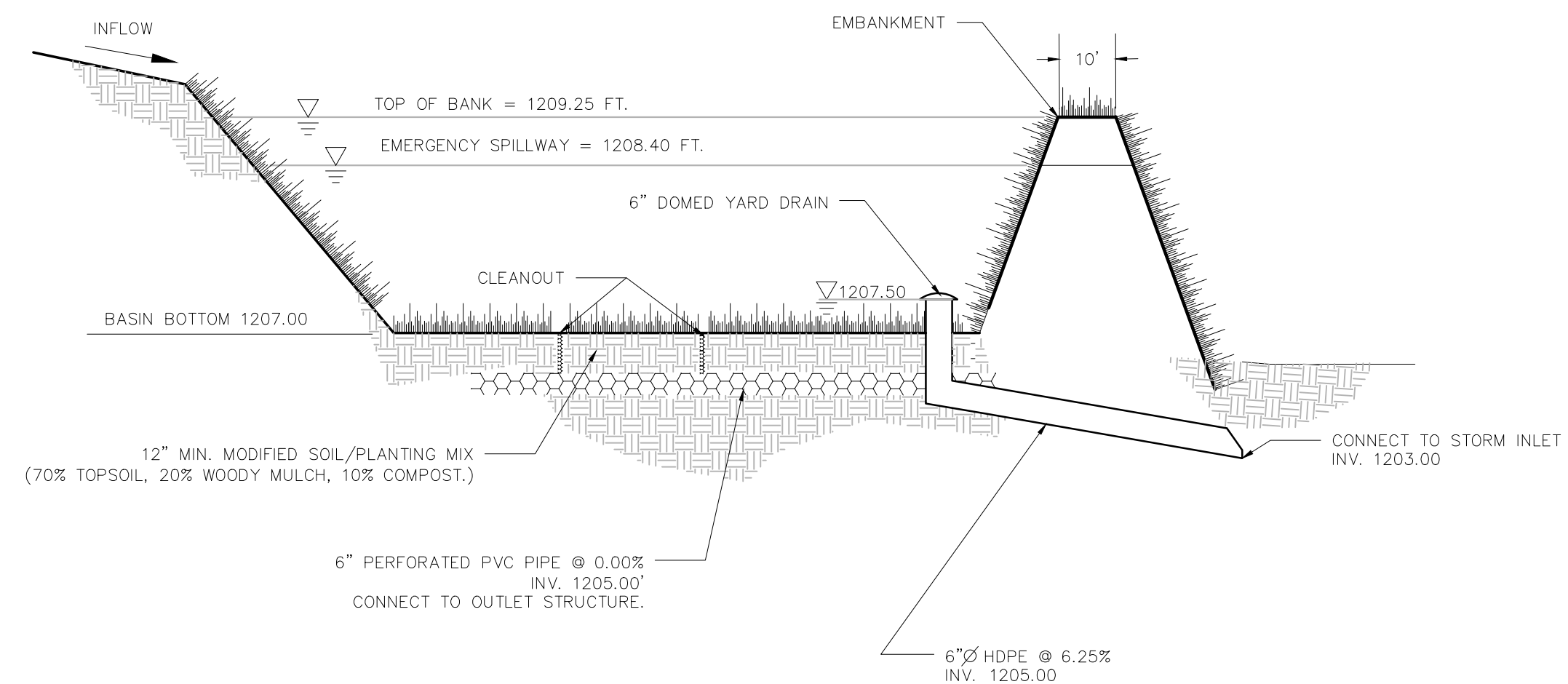
FIRE HYDRANT
N.T.S.

REVISIONS		
SYM	DATE	DESCRIPTION

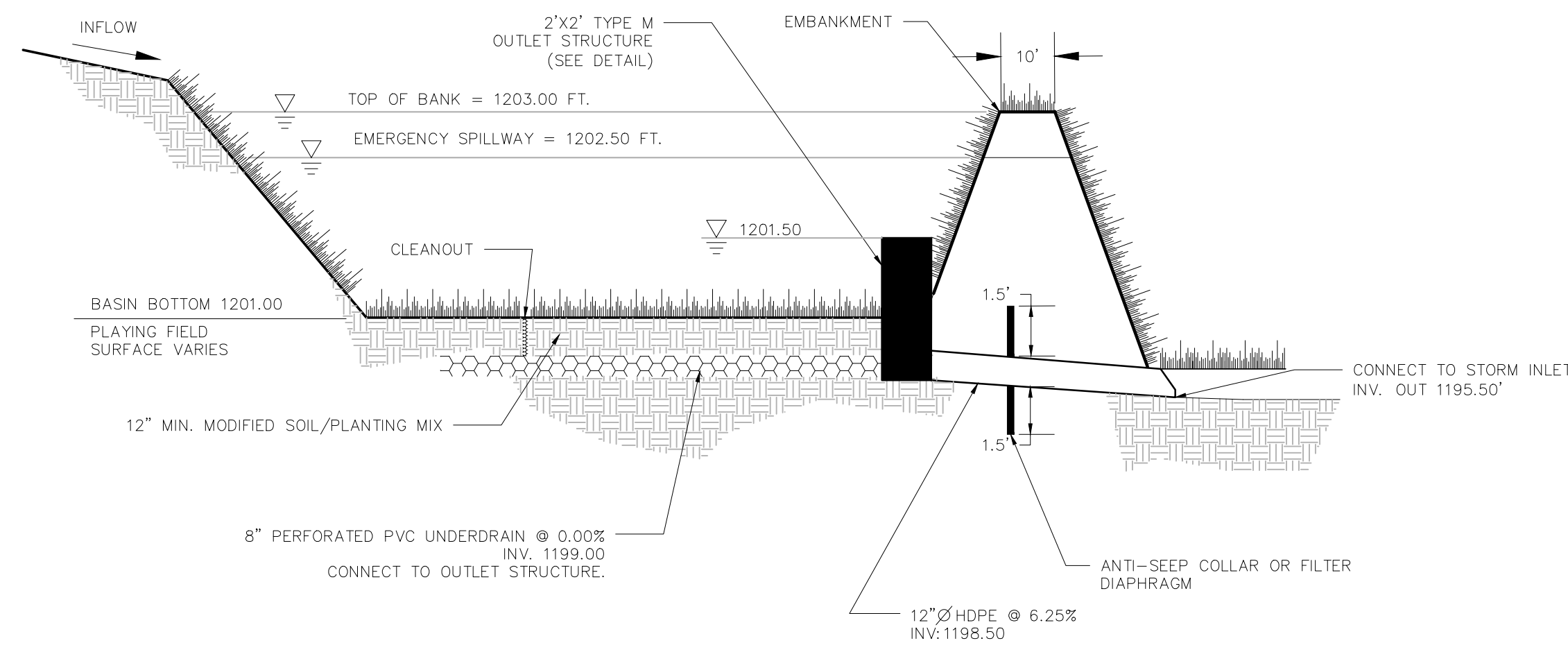
SUBMISSIONS	
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

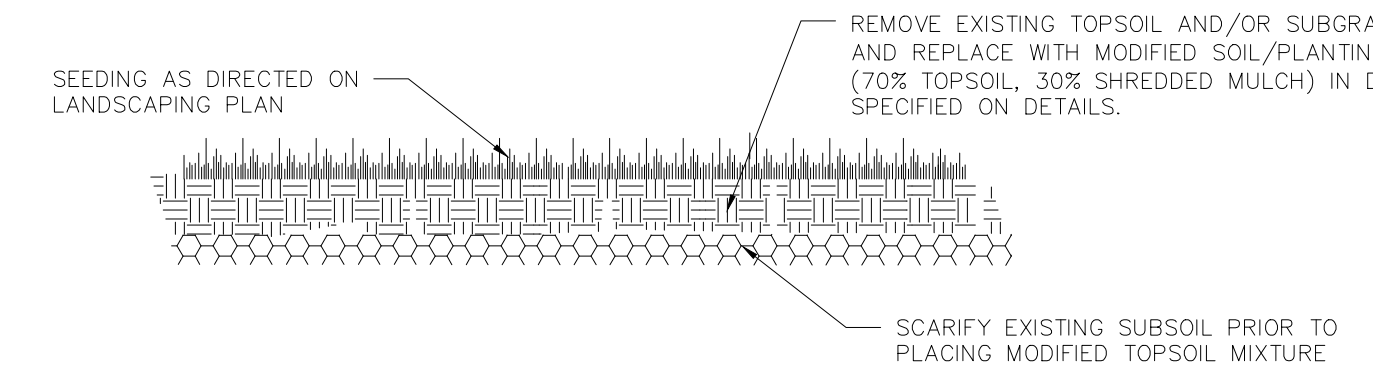
<PRELIMINARY NOT FOR CONSTRUCTION>



STORMWATER BASIN 1 DETAIL
 N.T.S.

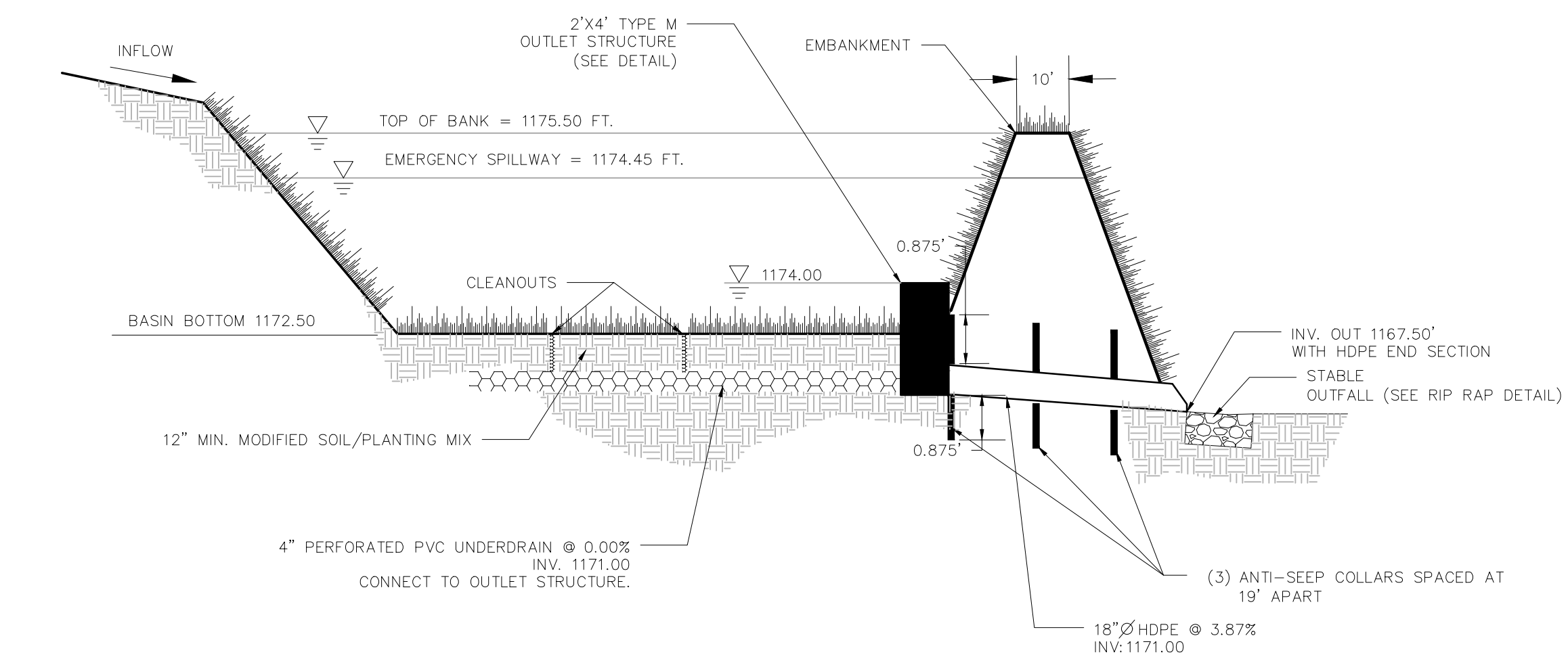


STORMWATER BASIN 2 DETAIL
 N.T.S.

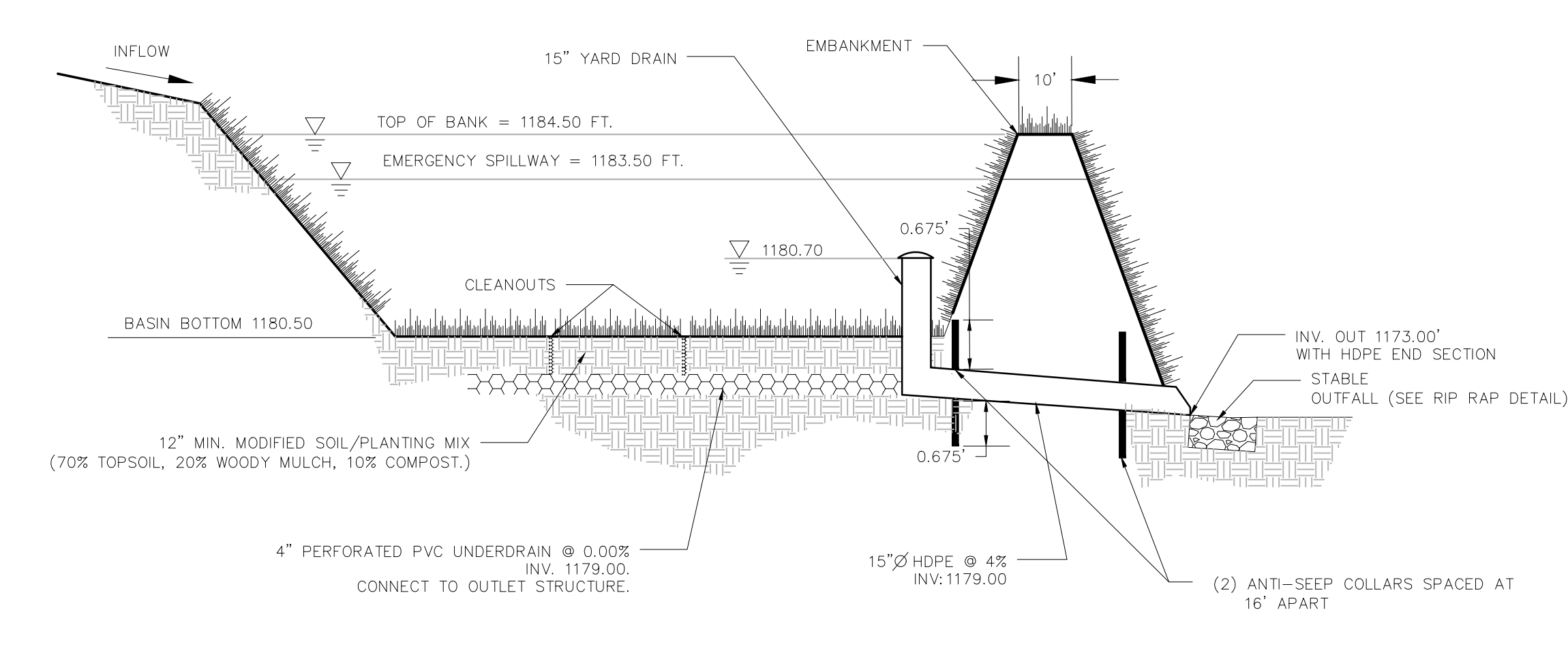


- NOTES:**
1. MODIFIED TOPSOIL MIX SHALL BE FREE OF CLAY AND NATIVE SOIL CLUMPS LARGER THAN 2" IN SIZE, AND SHALL BE THOROUGHLY MIXED TO CREATE A HOMOGENEOUS STATE OF SOIL AND MULCH.
 2. THE USE OF STRIPPED TOPSOIL FROM THE SITE IS ACCEPTABLE, PROVIDED THE TOPSOIL IS NOT COMPACTED WHEN PLACING IN A STOCKPILE 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.

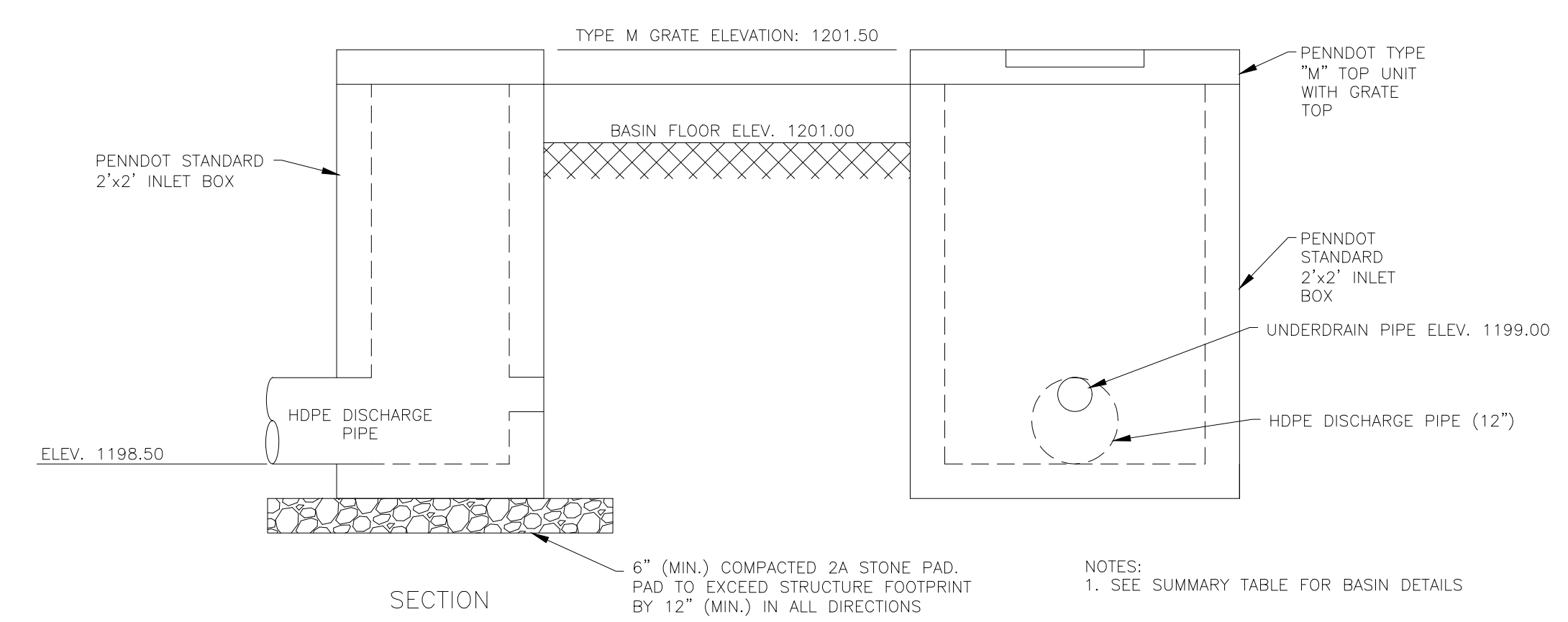
MODIFIED TOPSOIL
 N.T.S.



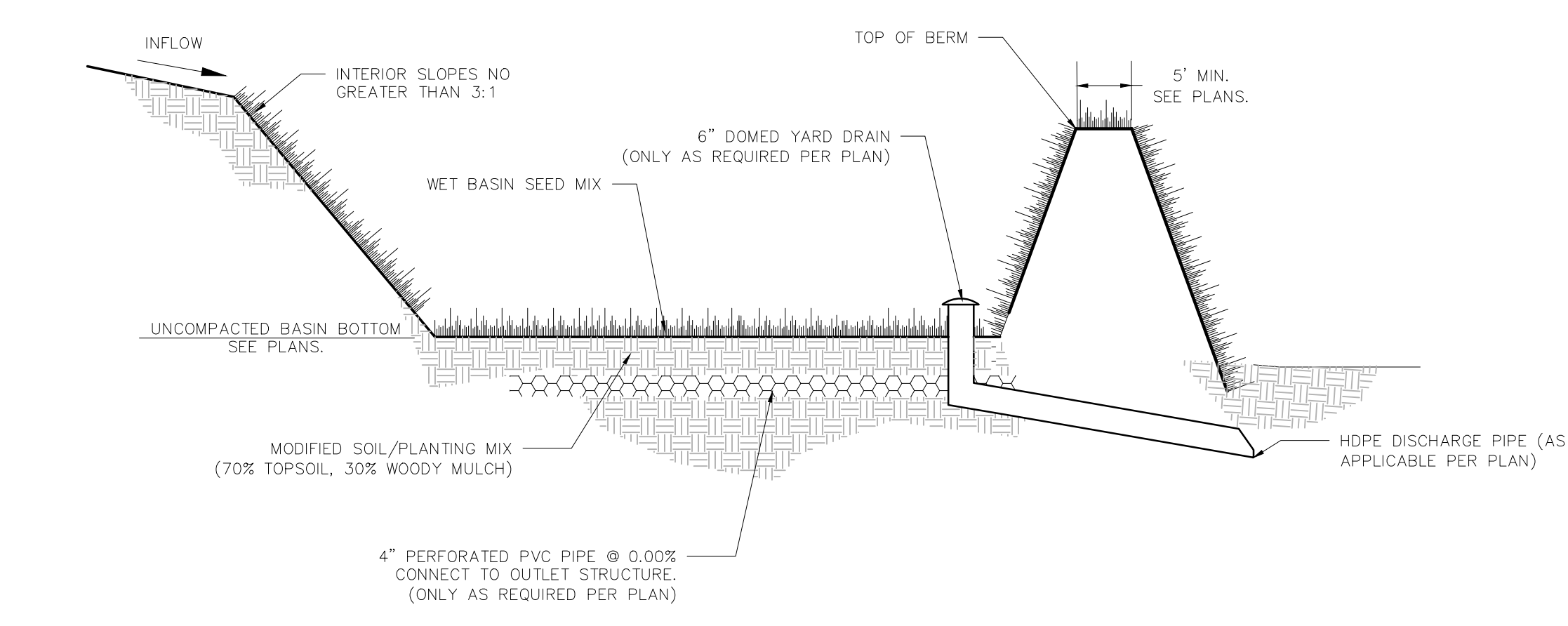
STORMWATER BASIN 3 DETAIL
 N.T.S.



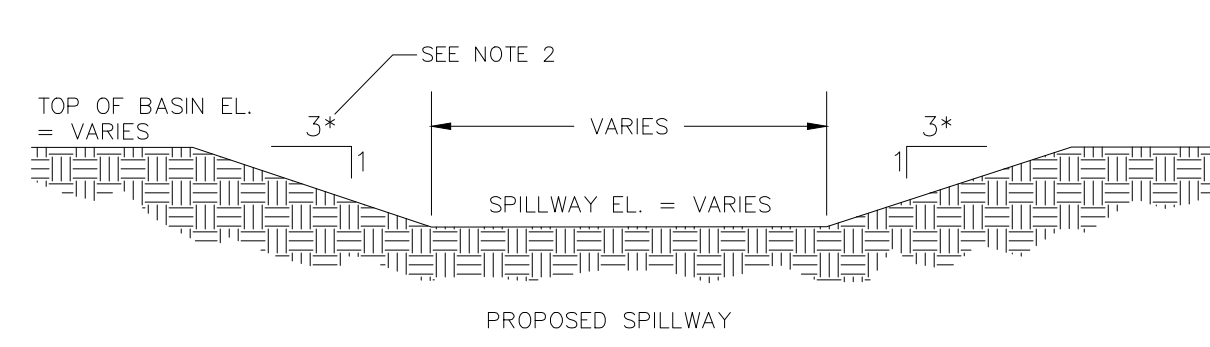
STORMWATER BASIN 4 DETAIL
 N.T.S.



STORMWATER BASIN 2 OUTLET STRUCTURE
 N.T.S.

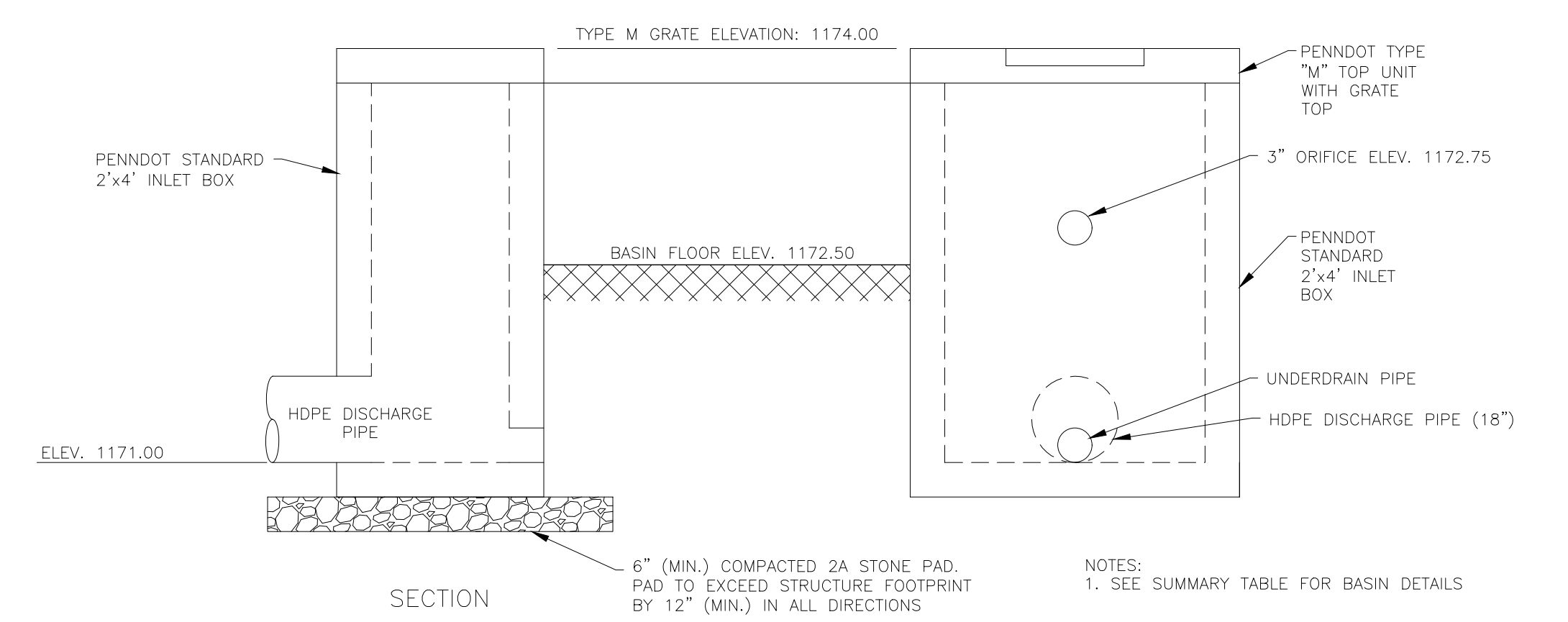


RAIN GARDEN TYPICAL DETAIL
 N.T.S.



- 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.



STORMWATER BASIN 3 OUTLET STRUCTURE
 N.T.S.

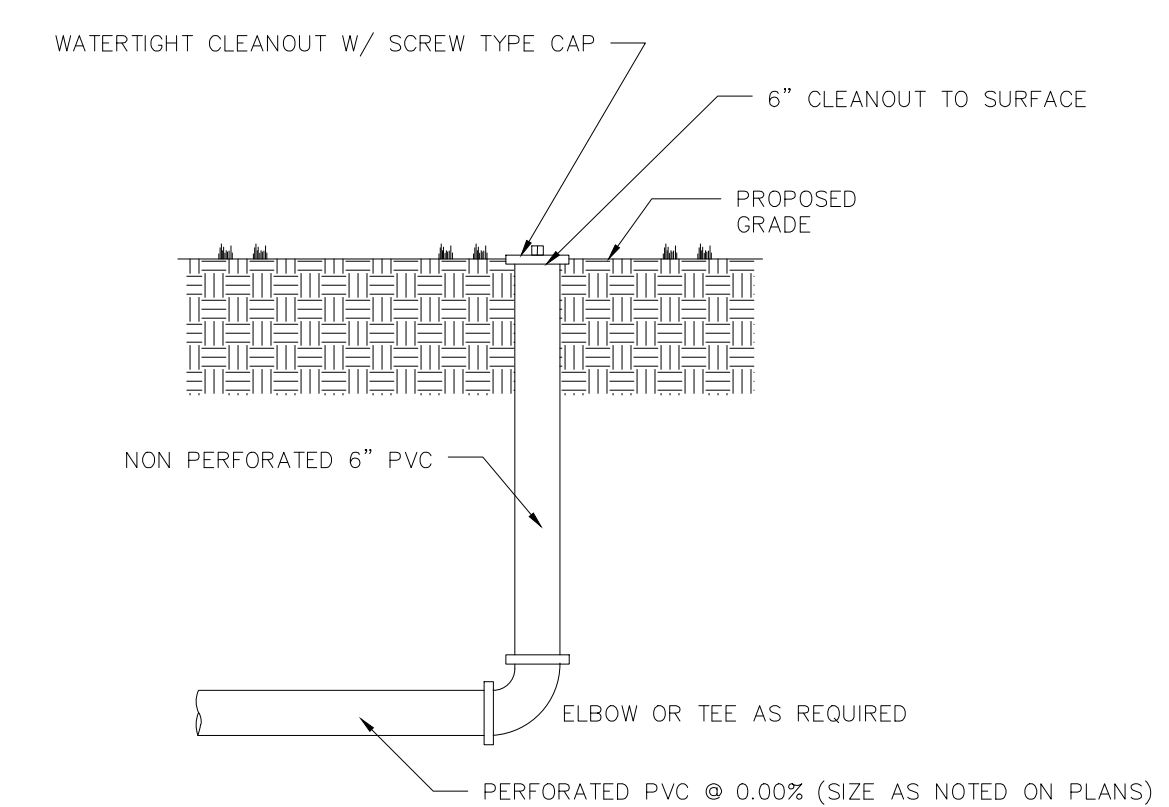
Stormwater Basin / Rain Garden Details																	
Basin Floor Elevation (sf)	Top of Outlet Structure Elev.	Underdrain Elevation	Basin Discharge Pipe - Size	Basin Discharge Pipe - Upstream Inv.	Outlet Structure Type/Size	Basin Bottom Area (sf)	Basin Top Area (sf)	Total Basin Storage (cf)	Basin Storage (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	1181.50	N/A	N/A	N/A	N/A	N/A	2,342	4,420	5,010	2,275	1183.00	1.50	1182.30	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"	

REVISIONS		
SYM	DATE	DESCRIPTION

SUBMISSIONS		
DATE	DESCRIPTION	TWP. SUBMISSION
06/07/19	TWP. SUBMISSION 1	1
10/02/19	TWP. SUBMISSION 2	2

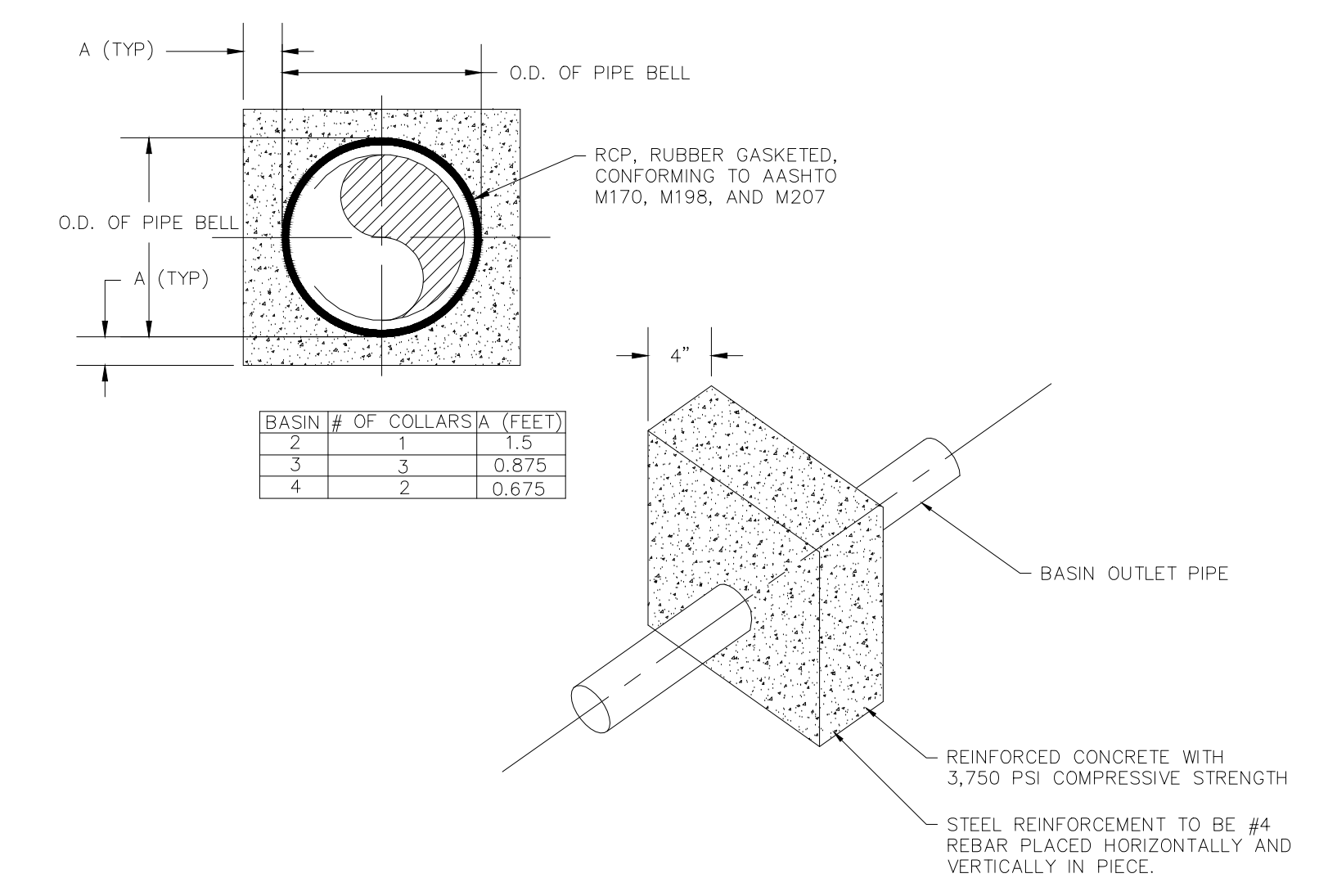
WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

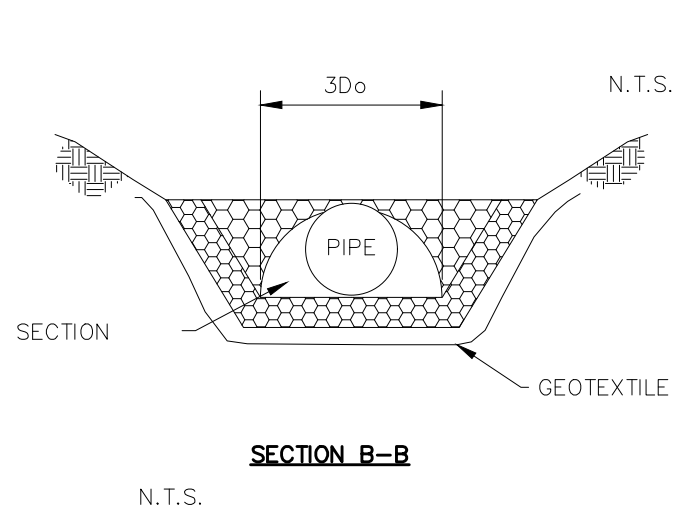
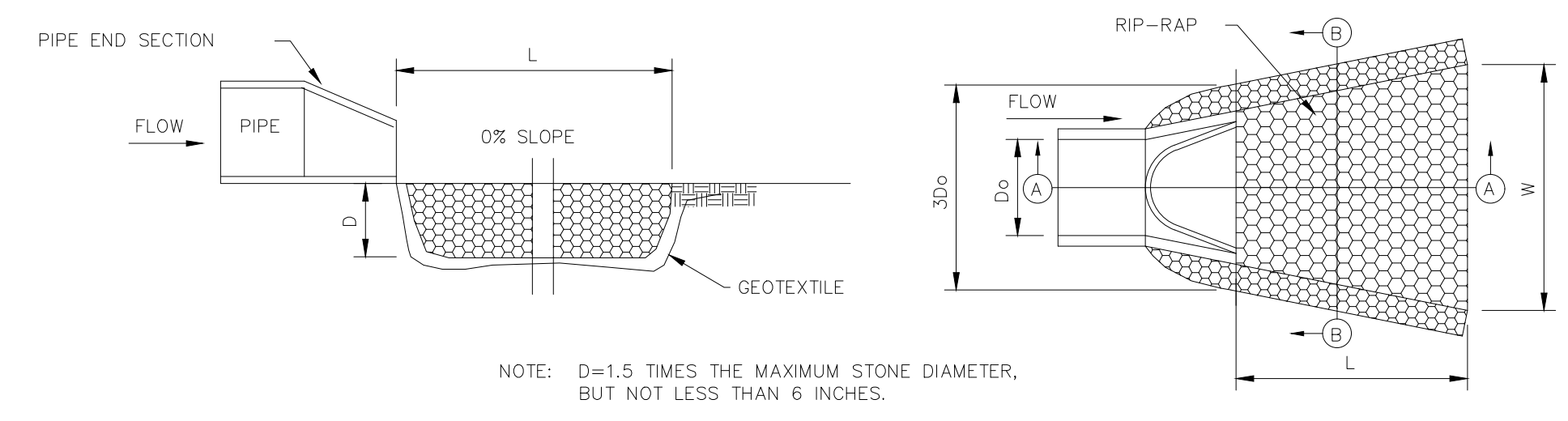


- NOTES:
1. PROVIDE OPEN GRATE TOP WHERE NOTED ON PLANS.
 2. PROVIDE FLAT SCREW TOP IN PLAYING FIELD AREAS.
 3. IN PAVED AREAS, PROVIDE TRAFFIC RATED CLEANOUT TOP ENCASED IN 4" CONCRETE ALL SIDES.

CLEANOUT DETAIL
N.T.S.



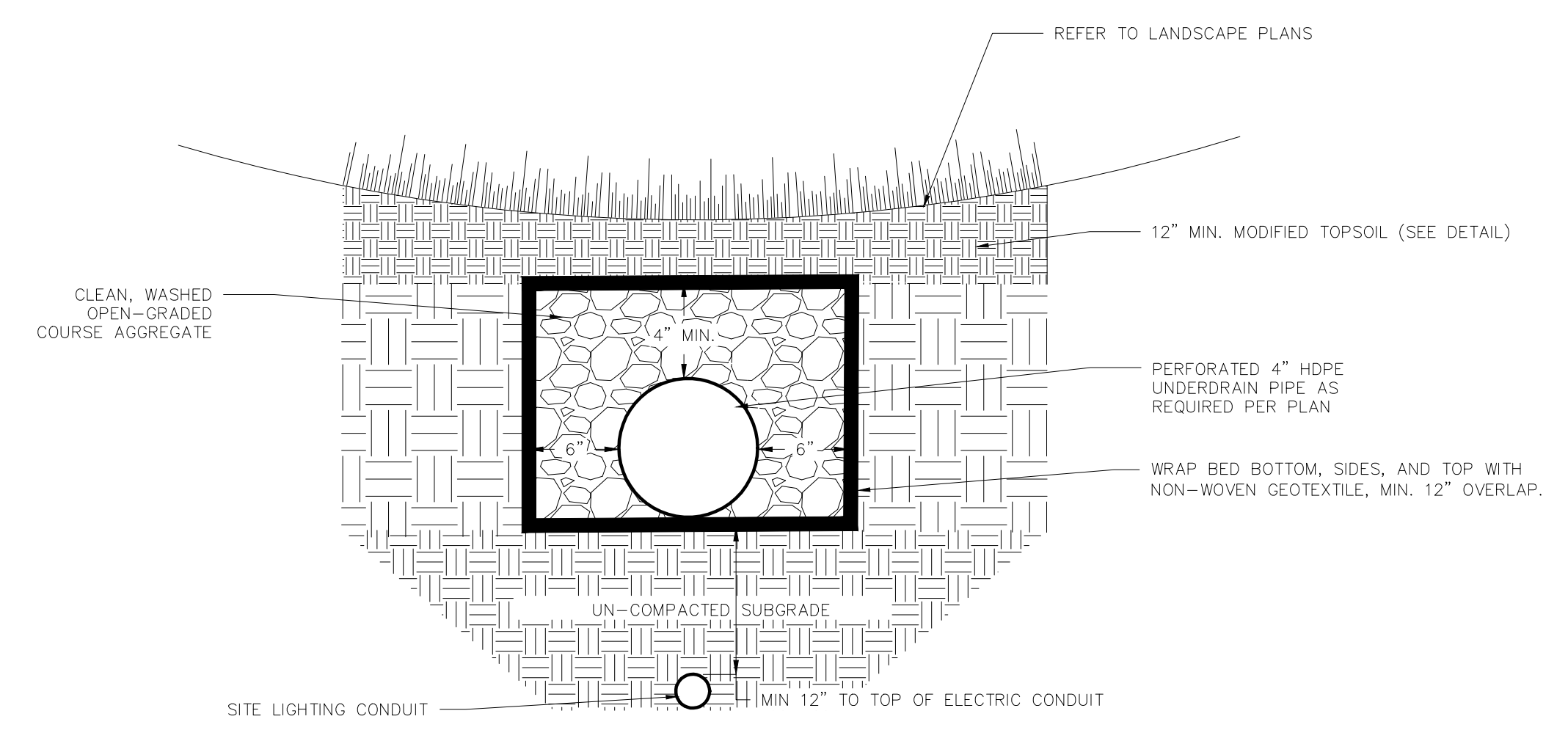
CONCRETE ANTI-SEEP COLLAR DETAIL
N.T.S.



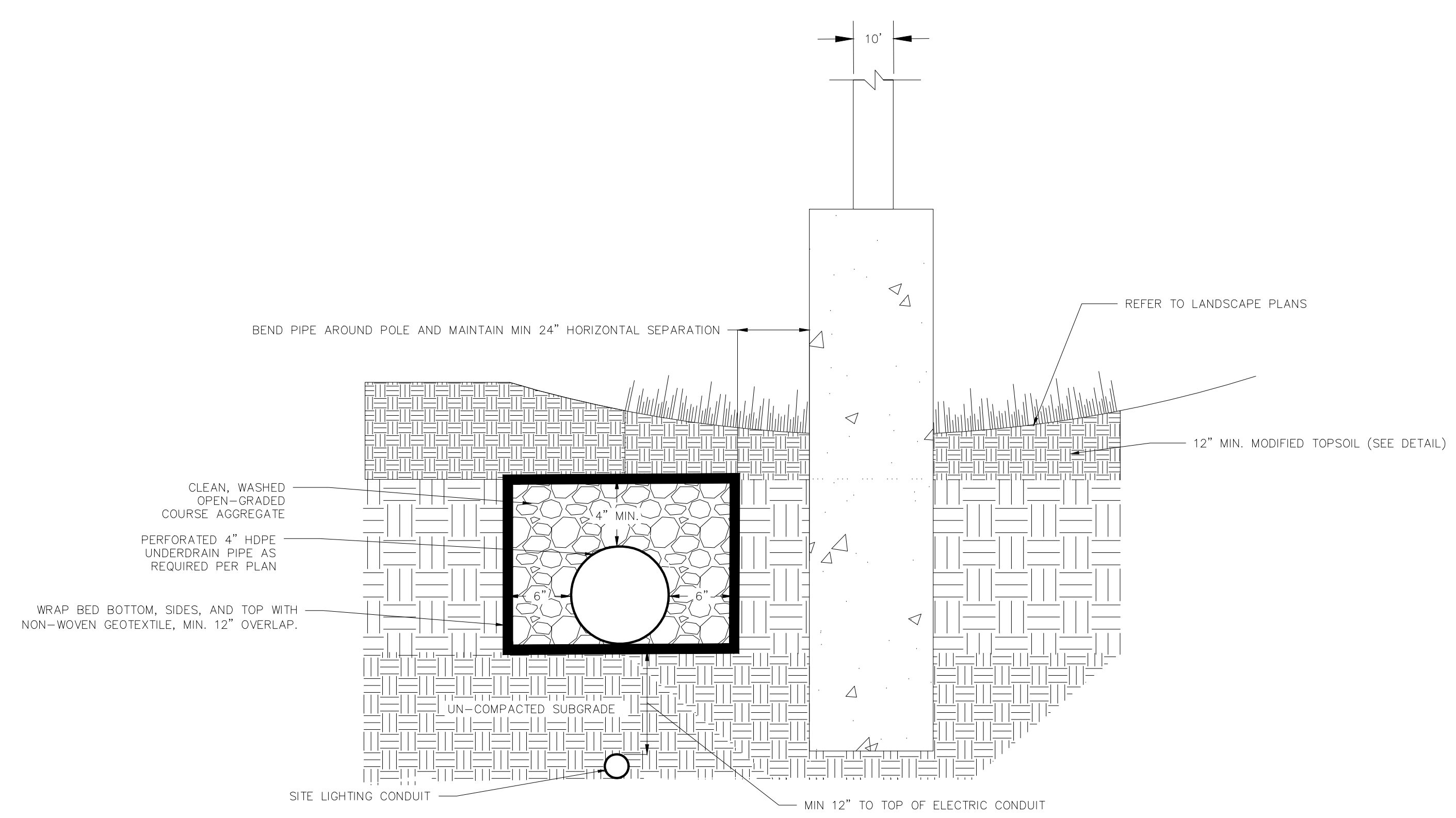
- NOTES:
1. ROCK WILL BE PLACED TO FULL COURSE THICKNESS IN ONE CONTINUOUS OPERATION TO PREVENT SEGREGATION OF MATERIALS. INDIVIDUAL ROCKS MAY BE REARRANGED, AND VOIDS FILLED WITH HAND PLACED SMALLER ROCK, TO ACHIEVE A UNIFORM ROCK BLANKET.
 2. NO ROCK PIECES SHALL HAVE A LENGTH EXCEEDING THREE TIMES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

RIP-RAP APRON DETAIL
N.T.S.

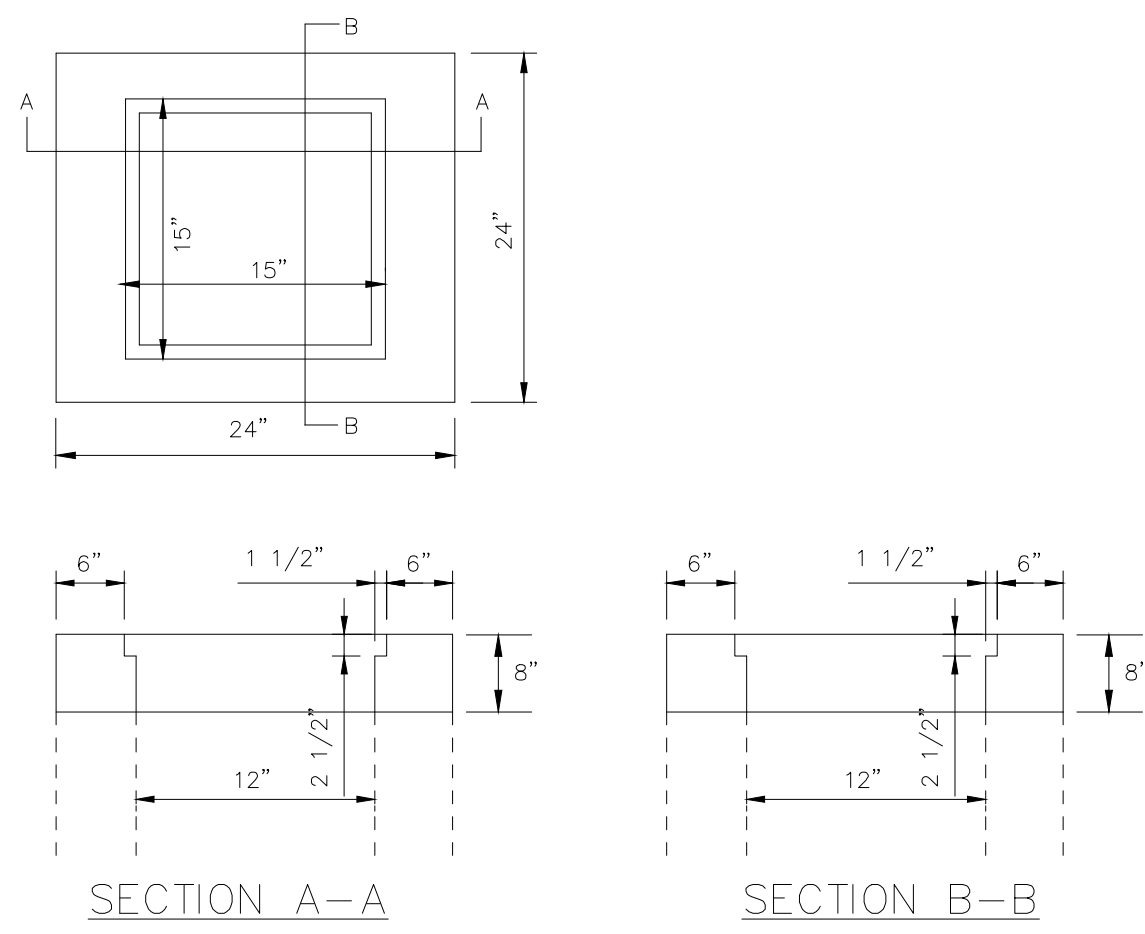
RIPRAP APRON NO.	W (FT)	L (FT)	SIZE OF ROCK	MIN ROCK DEPTH (D)	FLOW (CF'S)
1	12.5	10	R-3	18"	6
1.1	8.5	6	R-3	18"	3
1.2	8.5	6	R-3	18"	3
2	32.5	28	R-6	36"	52
3	32.5	28	R-6	36"	52
4	30	24	R-6	36"	47
5	11	8	R-3	18"	5
6	11	8	R-3	18"	5
7	15	10	R-3	18"	7
8	15	10	R-3	18"	7
9	20	16	R-4	18"	15
10	11.75	8	R-3	18"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



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

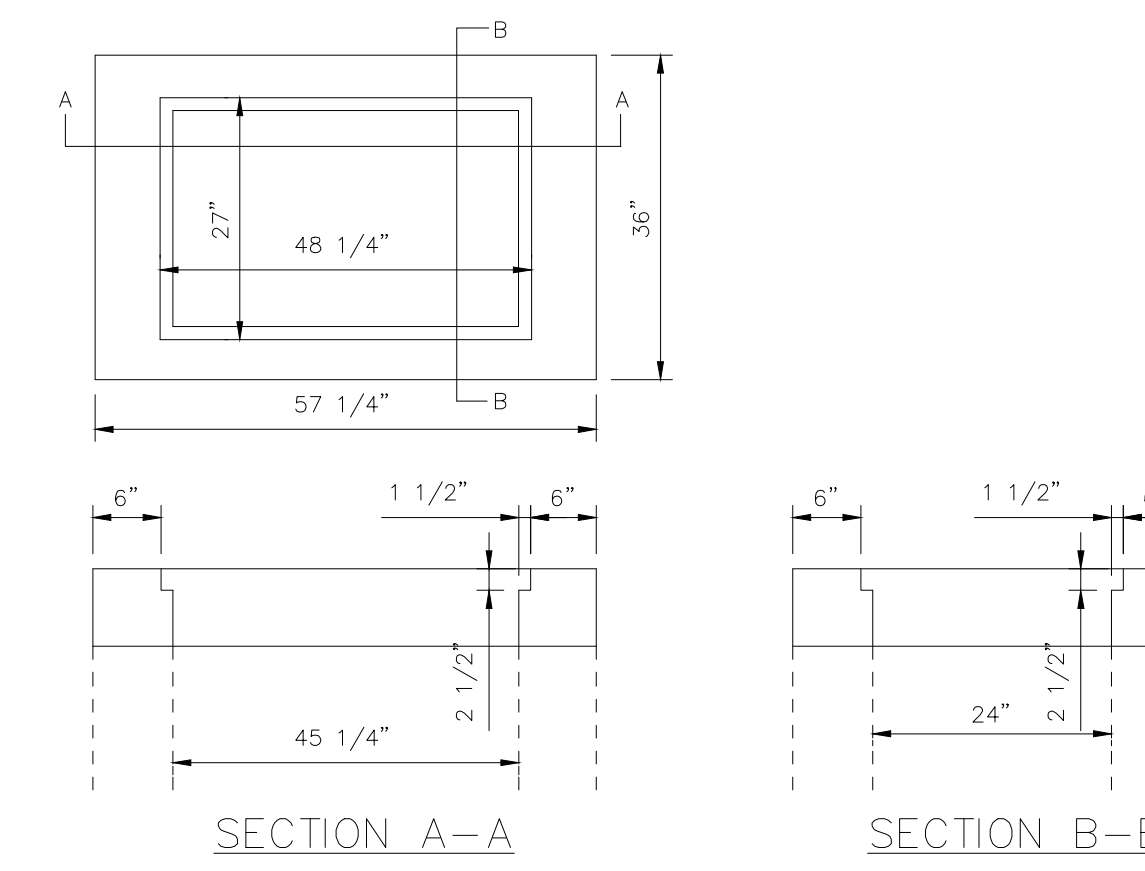


PARKING LOT SWALE & UNDERDRAIN DETAIL AT LIGHT POLE
N.T.S.



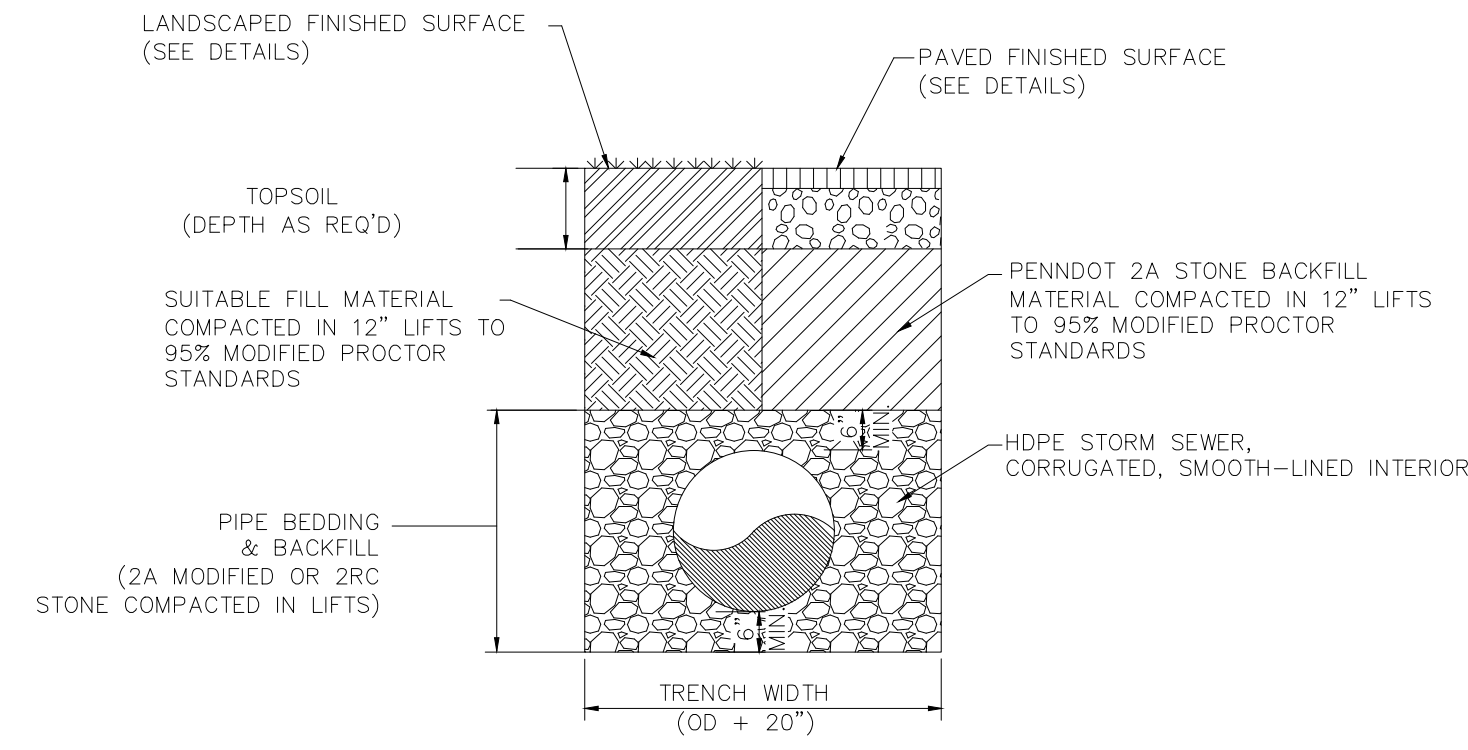
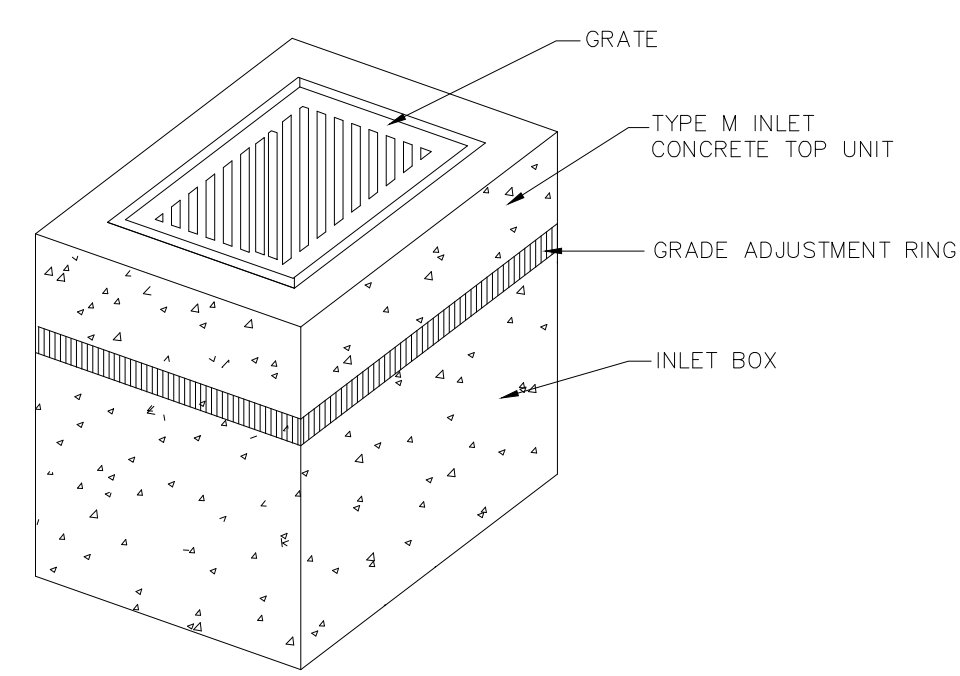
NOTE: ALL INLETS TO HAVE PENN DOT TYPE BICYCLE SAFE GRATES.

PENNDOT TYPE "M" 2x2' INLET
N.T.S.

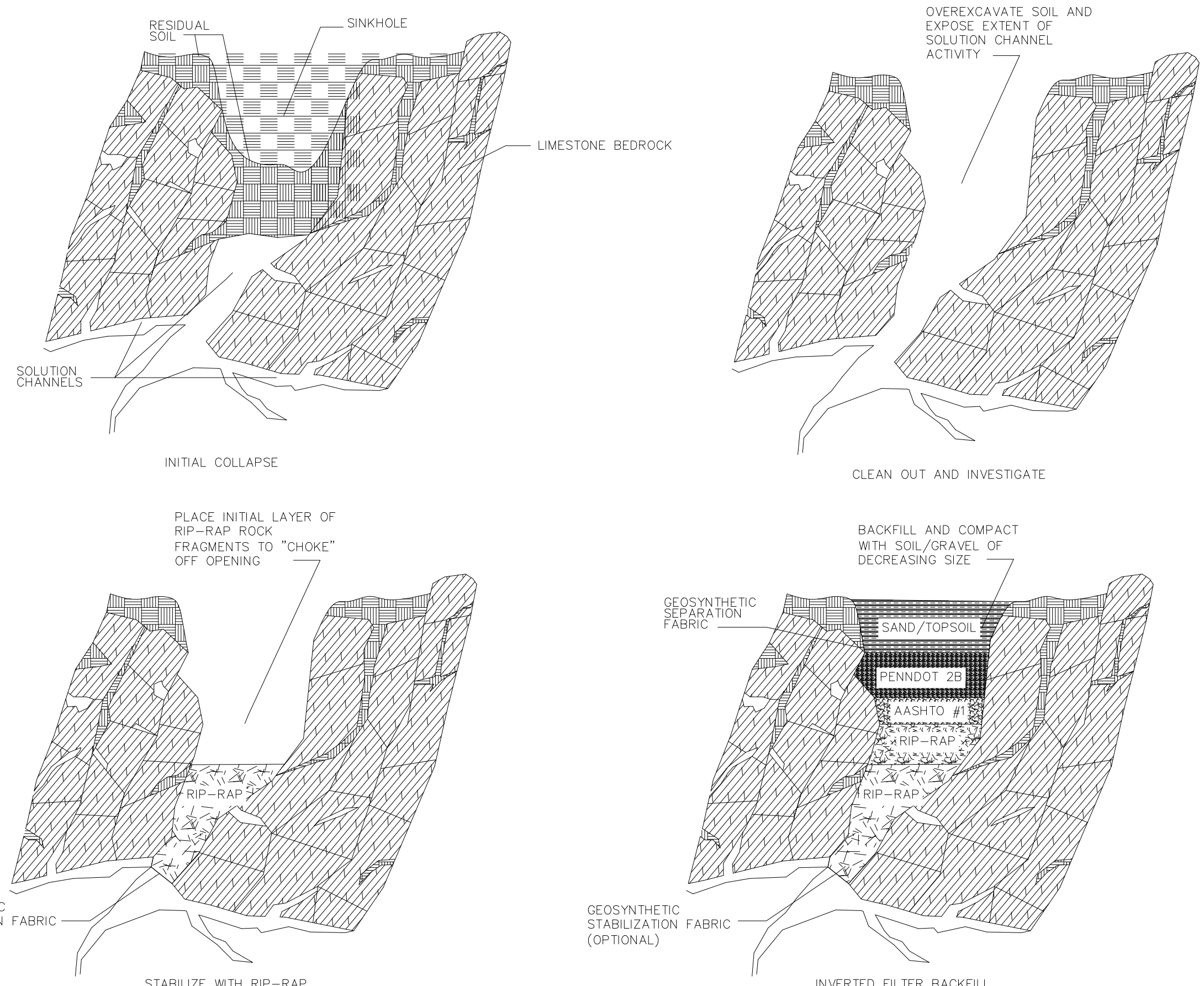
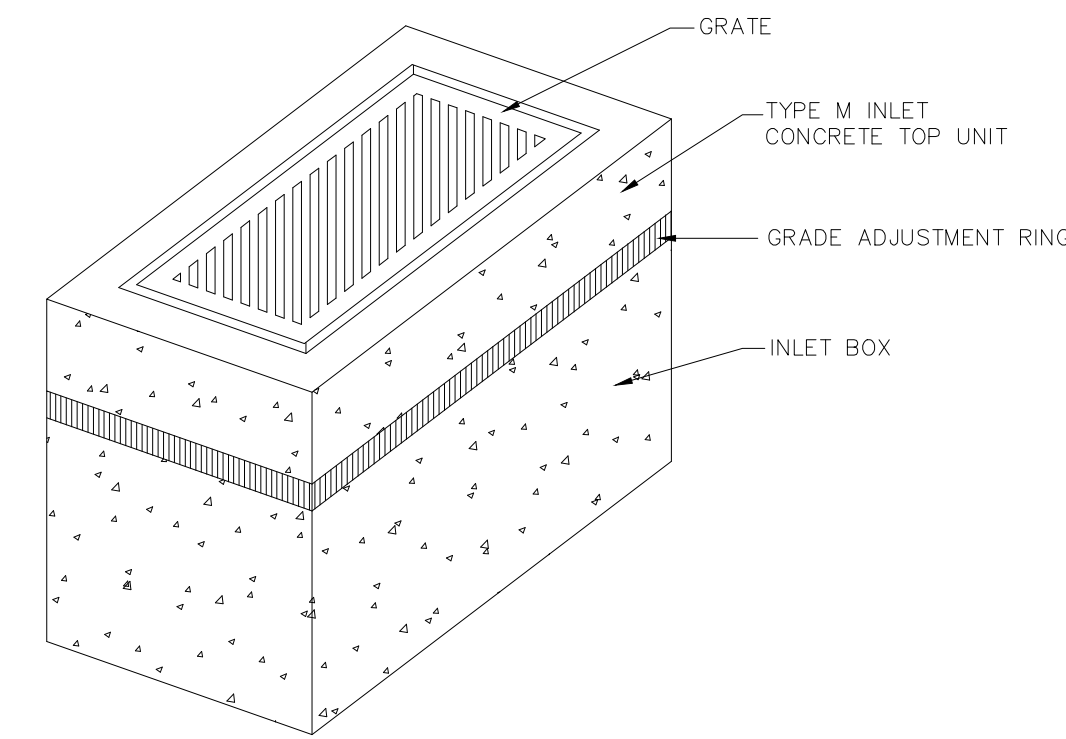


NOTE: ALL INLETS TO HAVE PENN DOT TYPE BICYCLE SAFE GRATES.

PENNDOT TYPE "M" 2x4' INLET
N.T.S.

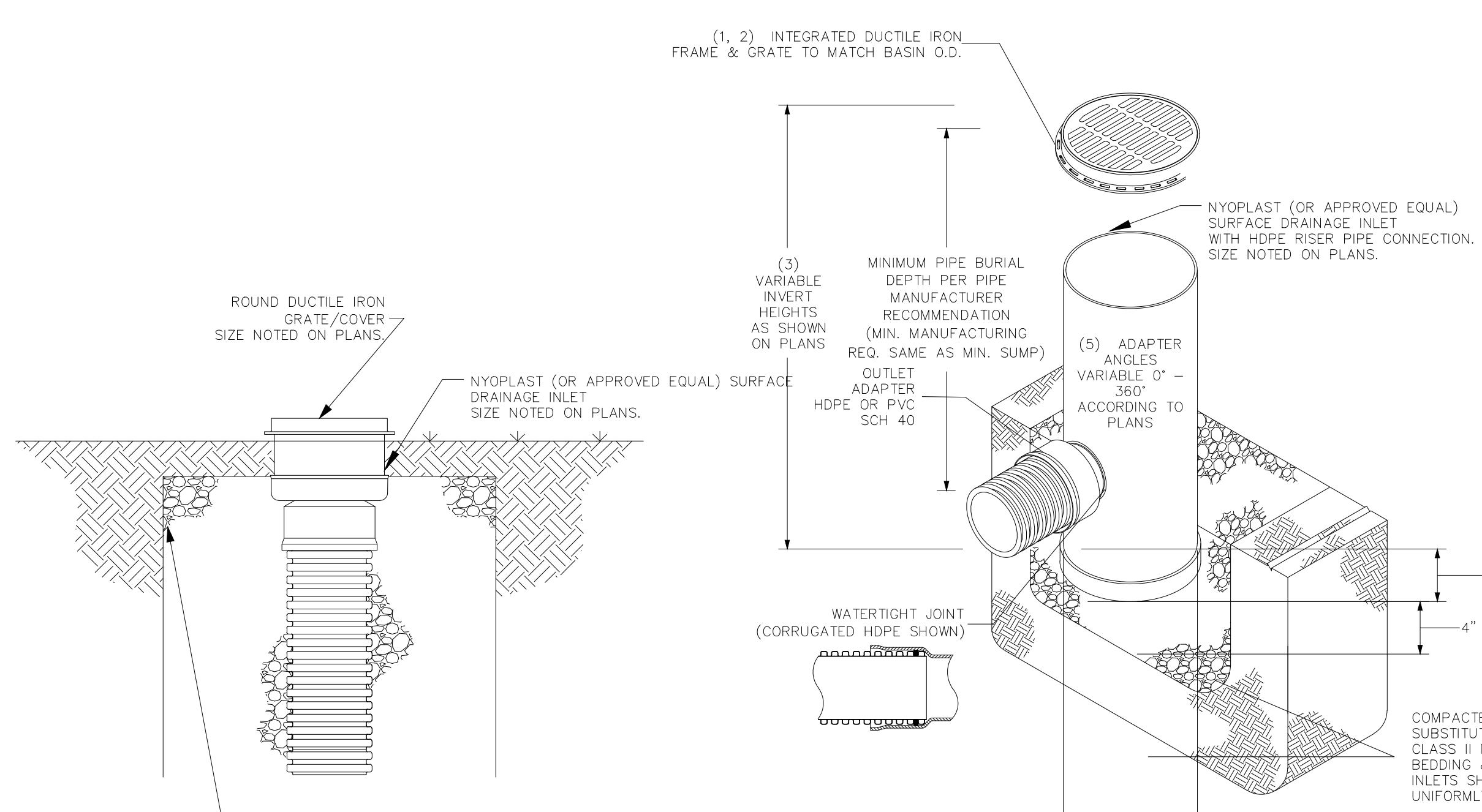


STORM SEWER (HDPE) INSTALLATION DETAIL
N.T.S.



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

- 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 striping process. Protecting these areas with temporary orange construction fence during earthwork activities is required to avoid compaction of soils and negating infiltration capabilities of the stormwater facilities. Where possible, excavators or backhoes should work from the sides to remove the topsoil within these areas.
- 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.
- 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.
- 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 (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.
- 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.
- 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.
- 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.
- 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 95% 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.
- 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.
- 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 steps:
- 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.
 - Placement of underdrain systems, gravel, and/or amended topsoil mixture: Stormwater facility subsolls 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.
 - 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 impermeable layer.
 - 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:
- Following construction, any damaged or incidentally compacted areas shall be restored to their design condition prior to final topsoil and seeding placement.
 - 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 designer, 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.
 - The owner shall remove any accumulation of debris from stormwater management areas; 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 rocks in any riprap areas 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.
 - 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.
 - A written report documenting each inspection shall be retained by the designer, 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.
 - 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.
 - The designer 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.
 - All impervious surfaces shall be maintained clean of oil, fuel or other toxic spills, in accordance with state, federal or local regulations.
 - The stormwater management facilities shall be maintained in the following manner:
 - 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 outlet shall be inspected for erosion issues and repaired as needed with topsoil, seed, or rip rap as required.
 - 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 become 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.
 - 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.
- 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)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Inspect for trash or large debris above the grate or within the structure/pipe Observe for cracks or deficiencies in the grates or concrete structure 	<ul style="list-style-type: none"> Keep free of debris and grass clippings. Repair or replace broken pipes or inlets as required.

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Fax: (814) 233-7832
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PENCO ENGINEERING
MECHANICAL & ELECTRICAL CONSULTANTS
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STATE COLLEGE, PA 16801
PROJECT NO. E2809
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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

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-temped 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 (<i>Lolium multiflorum</i>)	100	98	90	0.15	20.0
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Permanent seed mixtures shall be as follows:

Turf Grass Seed Mix Specifications

Mix Composition	Fawn (Tall Fescue, Fawn)
30.0% <i>Festuca arundinacea</i> , "Shining Star" (Perennial Ryegrass, "Shining Star" (turf type))	
30.0% <i>Lolium perenne</i> , "Volt" (Kentucky Bluegrass, "Volt")	
15.0% <i>Poa pratensis</i> , "Shamrock" (Kentucky Bluegrass, "Shamrock")	
15.0% <i>Poa pratensis</i> , "Annual Ryegrass")	
10.0% <i>Lolium multiflorum</i>	

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	Camper (Little Bluestem, Camper)
39.9% <i>Schizanthus scoparium</i> , PA Ecotype (Virginia Wildye, PA Ecotype)	
19.0% <i>Elymus virginicus</i> , PA Ecotype (Partridge Pea, PA Ecotype)	
30.7% <i>Panicum spharagocarpum</i> , PA Ecotype (Partridge Pea, PA Ecotype)	
4.0% <i>Chamaecrista fasciculata</i> , (Purple Coneflower)	
3.5% <i>Echinacea purpurea</i> , (Black-eyed Susan, Coastal Plain NC Ecotype)	
3.0% <i>Rudbeckia hirta</i> , (Oxeye Sunflower, PA Ecotype)	
2.0% <i>Helicopsis helianthoides</i> , (Tall White Beardtongue, PA Ecotype)	
2.0% <i>Penstemon digitalis</i> , (Bedstraw Grass, PA Ecotype)	
1.0% <i>Elymus hystrix</i> , (Marsh Blazing Star, PA Ecotype)	
1.0% <i>Liatris spicata</i> , (Autumn Bellgrass, Albany Pine Bush-NY Ecotype)	
0.5% <i>Agrostis perennans</i> , (Butterfly Milkweed)	
0.5% <i>Asclepias tuberosa</i> , (Blueleaf Aster, PA Ecotype)	
0.5% <i>Aster macrophyllus</i> , (Zipag Aster, PA Ecotype)	
0.5% <i>Aster prenanthoides</i> , (Blue False Indigo, Southern WV Ecotype)	
0.5% <i>Baptisia australis</i> , (White Avena, PA Ecotype)	
0.5% <i>Geum canadense</i> , (Narrowleaf Mountainmint)	
0.5% <i>Pycnanthemum tenuifolium</i> , (White Goldenrod, PA Ecotype)	
0.5% <i>Solidago juncea</i> , (Ohio Spikenard, PA Ecotype)	
0.5% <i>Tradescantia ohiensis</i> , (Chilensis, PA Ecotype)	
0.4% <i>Zizia aurea</i> , (Thimbleweed, PA Ecotype)	
0.4% <i>Anemone virginiana</i> , (Smooth Blue Aster, NY Ecotype)	
0.4% <i>Morarda fistulosa</i> , (Wild Bergamot, Fort Indiantown Gap-PA Ecotype)	
0.2% <i>Solidago juncea</i> , (Early Goldenrod, PA Ecotype)	
0.1% <i>Baptisia stricta</i> , (Yellow False Indigo, PA Ecotype)	
0.1% <i>Penstemon hairsus</i> , (Hardy Beardtongue)	
0.1% <i>Veronicastrum virginicum</i> , (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: 0.5 – 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	Hard Fescue	Chewings Fescue
80.0% <i>Festuca ovina</i>		
20.0% <i>Festuca rubra</i> 'commutata'		

General Product Information: Low Maintenance Lawn Areas

Item Number: Lesco No Mow Fine Fescue 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	Silhouette Chewings Fescue
34.50% <i>Festuca commutata</i>	
24.50% <i>Festuca ovina</i>	
12.38% <i>Hard Fescue</i>	
12.39% <i>Festuca rubra</i>	
11.76% <i>Festuca brevifolia</i> (F. longifolia)	
11.76% <i>Festuca rubra</i>	

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 Ryegrass and Clover cover crop added for short-term stability

Mix Composition	Blue Mesa Sheep Fescue	Shadlow II Chewings Fescue	Shadlow II Chewings Fescue
22.0% <i>Festuca ovina</i>			
22.0% <i>Festuca commutata</i>			
12.0% <i>Festuca brevifolia</i> (F. longifolia)			
12.0% <i>Festuca rubra</i>			
12.0% <i>F. rubra, subsp. rubra</i>			
12.0% <i>Festuca brevifolia</i> (F. longifolia)			
3.0% <i>Lolium multiflorum</i>			
3.0% <i>Trifolium repens</i>			

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	Largeleaf Coneopsis	Black-eyed Susan, Coastal Plain NC Ecotype
12.0% <i>Careopsis lanceolata</i>		
12.0% <i>Echinacea purpurea</i>		
12.0% <i>Parthenocis digitalis</i>		
12.0% <i>Rudbeckia hirta</i>		
9.5% <i>Chamaecrista fasciculata</i>		
8.0% <i>Helicopsis helianthoides</i>		
8.0% <i>Verte hastata</i>		
5.0% <i>Aster laevis</i>		
5.0% <i>Liatris spicata</i>		
3.0% <i>Asclepias incarnata</i>		
3.0% <i>Aster novae-angliae</i>		
2.0% <i>Senecio heliopsis</i>		
2.0% <i>Tradescantia ohiensis</i>		
2.0% <i>Zizia aurea</i>		
1.8% <i>Moranda fistulosa</i>		
1.0% <i>Geum canadense</i>		
1.5% <i>Pycnanthemum tenuifolium</i>		
1.0% <i>Baptisia australis</i>		
1.0% <i>Lespedeza capitata</i>		
0.5% <i>Solidago juncea</i>		
0.3% <i>Eupatorium perfoliatum</i>		
0.2% <i>Solidago rugosa</i>		
0.2% <i>Solidago speciosa</i>		
0.1% <i>Eupatorium fistulosum</i>		
0.1% <i>Eupatorium rugosum</i>		

*Plant with Oaks 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	Variety Not Stated (Sheep Fescue, Variety Not Stated)	Black-eyed Susan, Coastal Plain NC Ecotype
73.2% <i>Festuca ovina</i>		
17.0% <i>Lolium multiflorum</i>		
3.0% <i>Chrysanthemum maximum</i> (Shasta Daisy)		
2.0% <i>Careopsis lanceolata</i> (Largeleaf Coneopsis)		
2.0% <i>Rudbeckia hirta</i> , Coastal Plain NC Ecotype (Black-eyed Susan, Coastal Plain NC Ecotype)		
0.5% <i>Achillea millefolium</i> (Common Yarrow)		
0.3% <i>Chamaecrista fasciculata</i> , PA Ecotype (Partridge Pea, PA Ecotype)		
0.3% <i>Eupatorium coelestinum</i> , VA Ecotype (Milkweaver, VA Ecotype)		
0.3% <i>Rudbeckia fulgida</i> var. <i>fulgida</i> , Northern VA Ecotype (Orange Coneflower, Northern VA Ecotype)		
0.2% <i>Penstemon hirsutus</i> (Hardy Beardtongue)		
0.2% <i>Pycnanthemum tenuifolium</i> (Narrowleaf Mountainmint)		
0.1% <i>Aster oblongifolius</i> , PA Ecotype (Aromatic Aster, PA Ecotype)		
0.1% <i>Aster prenanthoides</i> , PA Ecotype (Zipag Aster, PA Ecotype)		
0.1% <i>Baptisia stricta</i> , PA Ecotype (Yellow False Indigo, PA Ecotype)		
0.1% <i>Tradescantia virginiana</i> , Southeastern PA/Northern VA blend (Virginia Spikenard, 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	Variety Not Stated (Red Clover, Medium, Variety Not Stated)	White Avena, PA Ecotype
40.0% <i>Trifolium pratense</i> , Medium, Variety Not Stated (Red Clover, Medium, Variety Not Stated)		
30.0% <i>Festuca arundinacea</i> , 'Bronson' (Tall Fescue, 'Bronson' (pasture type))		
20.0% <i>Medicago sativa</i> , VNS (Alfalfa, VNS)		
10.0% <i>Panicum pratense</i> , 'Cintra' (Timothy, 'Cintra')		

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	Akalkgrass, 'Fults'	Blunt Broom Sedge, PA Ecotype
20.0% <i>Puccinellia distans</i> , 'Fults'		
19.0% <i>Panicum clandestinum</i> , 'Tigona'		
18.0% <i>Agrostis stolonifera</i>		
18.0% <i>Elymus virginicus</i> , PA Ecotype		
15.0% <i>Poa palustris</i>		
5.0% <i>Carex vulpinoidea</i> , PA Ecotype		
5.0% <i>Juncus effusus</i>		
2.0% <i>Carex scoparia</i> , 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: 0.5 – 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-soluble, nondecomposable inert solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition 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.

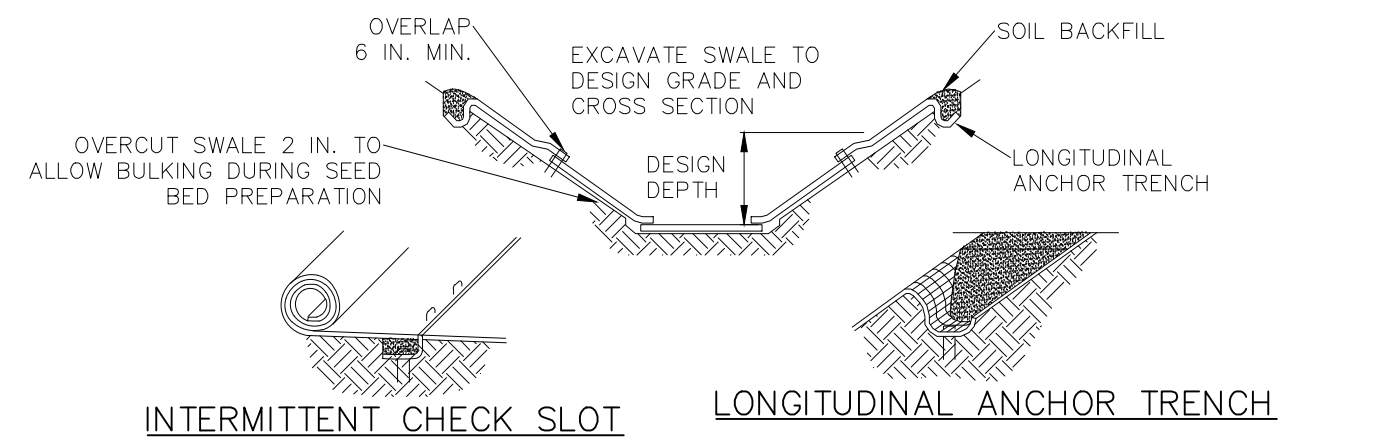
Environmental due diligence is defined as investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of ownership and use of history of property, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental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

SEQUENCE OF CONSTRUCTION FOR EROSION AND SEDIMENTATION CONTROL

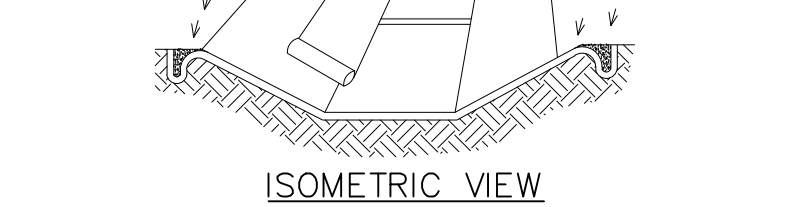
1. Submit a detailed construction schedule to the Owner for evaluation and approval. The sequence below provides a general guidance installation of site features to minimize off-site erosion and sediment transport, however it is the Contractor's responsibility to review and determine the final process 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 agriculture/farming cover to No-Mow Fescue (see Landscaping Plan). This area is proposed to be transitioned through the process of underdraining 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 depth 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:

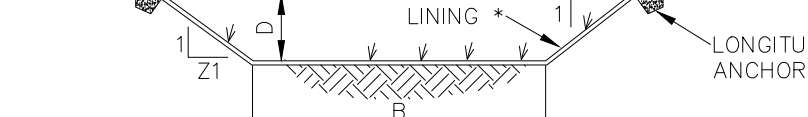
1. Topsoil stockpile heights shall not exceed 45 feet. Stockpile sides must be 3:1 or flatter.
2. A copy of the approved erosion and sediment control plan must be available at the project site at all times. The operator shall assure that the approved erosion and sediment control plan is properly and 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 unforeseen 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 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



PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS, OR OTHER TEMPORARY SWALE LINER SYSTEM.



ISOMETRIC VIEW



SWALE CROSS-SECTION

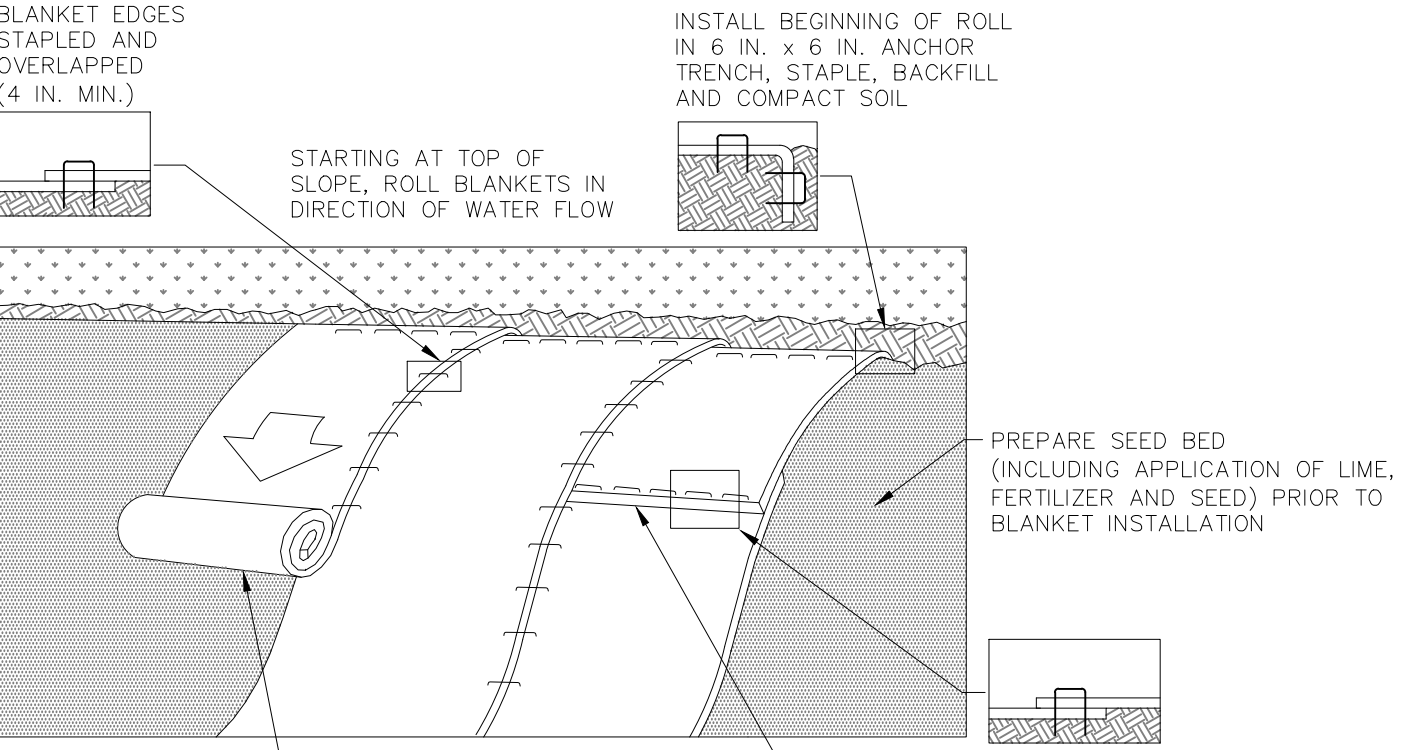
* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

SWALE NO.	DEPTH D (FT)	TOP WIDTH W (FT)	LINING
1	1.0	8.0	NAG 57% PERM. SEED
2	1.0	11.0	NAG SC150; PERM. SEED
3	0.75	6.0	NAG 57% PERM. SEED
4	1.0	9.5	NONE
5	1.0	7.8	NAG SC150; PERM. SEED
6	1.0	7.8	NAG 57% PERM. SEED
7	1.0	12.50	NAG SC150; PERM. SEED
8&9	0.50	7.50	NAG 57% PERM. SEED
10&12	1.0	12.50	NAG 57% PERM. SEED
11	0.50	17.0	NONE

- NOTES:
- SWALES SHALL BE LINED WITH S75B NORTH AMERICAN GREEN EROSION CONTROL LINING.
 - ALL SWALES DESIGNATED ON THE EROSION AND SEDIMENT CONTROL PLANS SHALL BE LINED.
 - ANCHOR TRENDONES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
 - CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
 - 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.
 - 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

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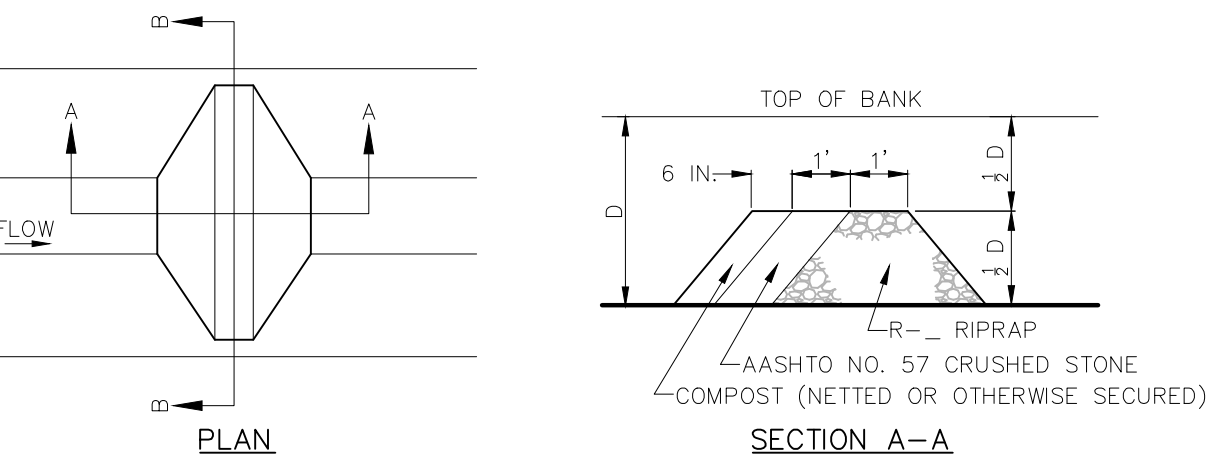


THE BLANKET SHOULD NOT BE STRETCHED; IT MUST MAINTAIN GOOD SOIL CONTACT. OVERLAP BLANKET ENDS 6 IN. MIN. WITH THE UPSLOPE BLANKET OVERLYING THE DOWNSLOPE BLANKET (SHINGLE STYLE). STAPLE SECURELY. REFER TO MANUF. RECOMMENDED STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE BEING BLANKETED.

- 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, CLOUDS, 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

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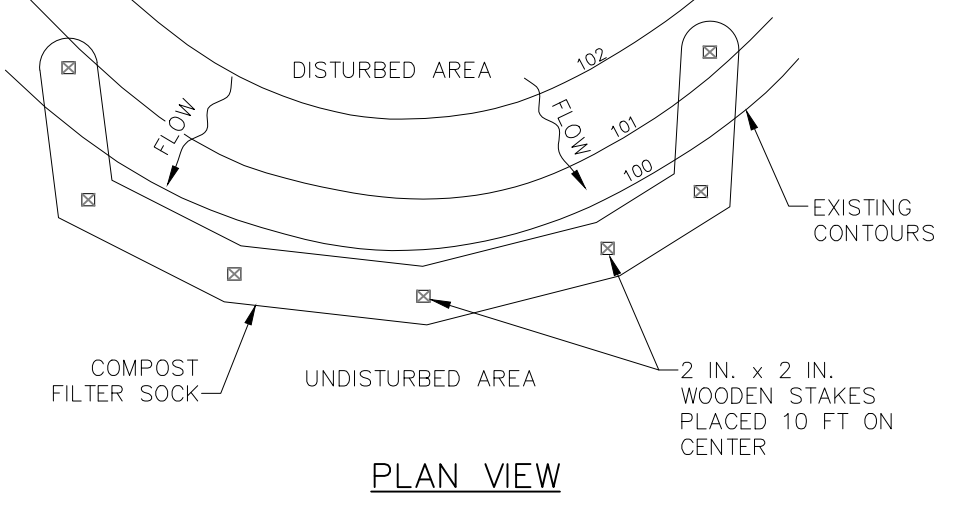
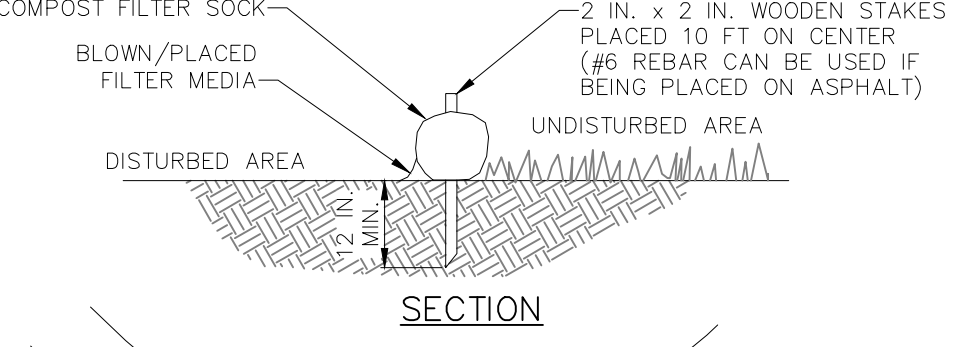


NOTES:

- 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

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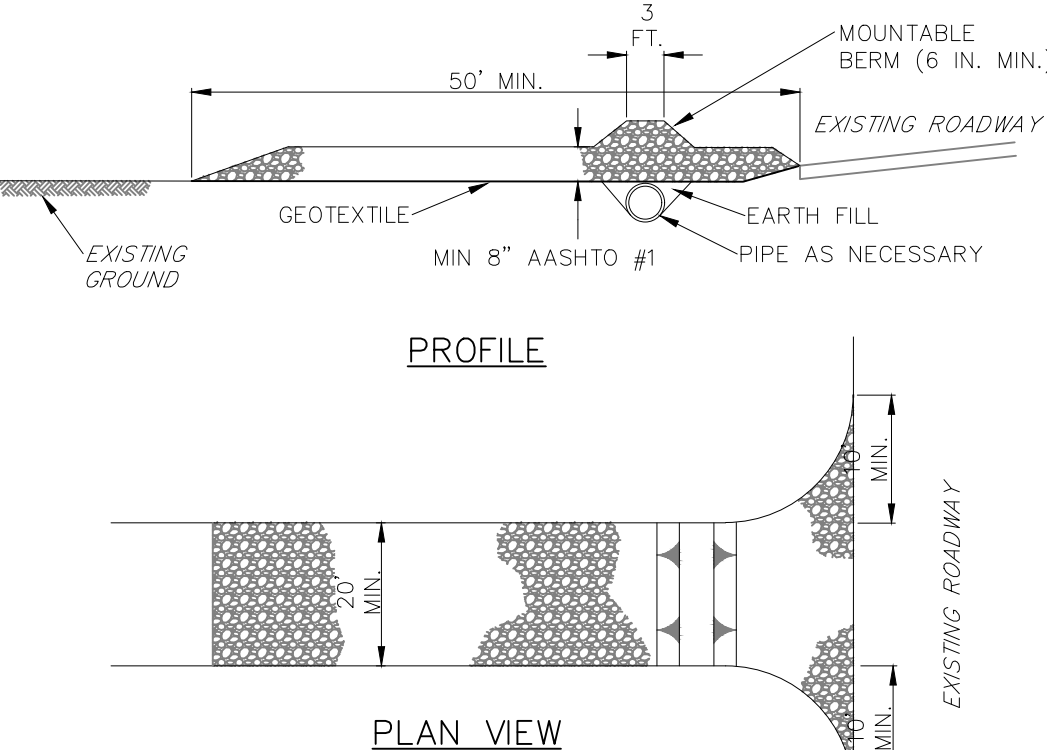


NOTES:

- 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.
- BIOGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTOGRADABLE 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

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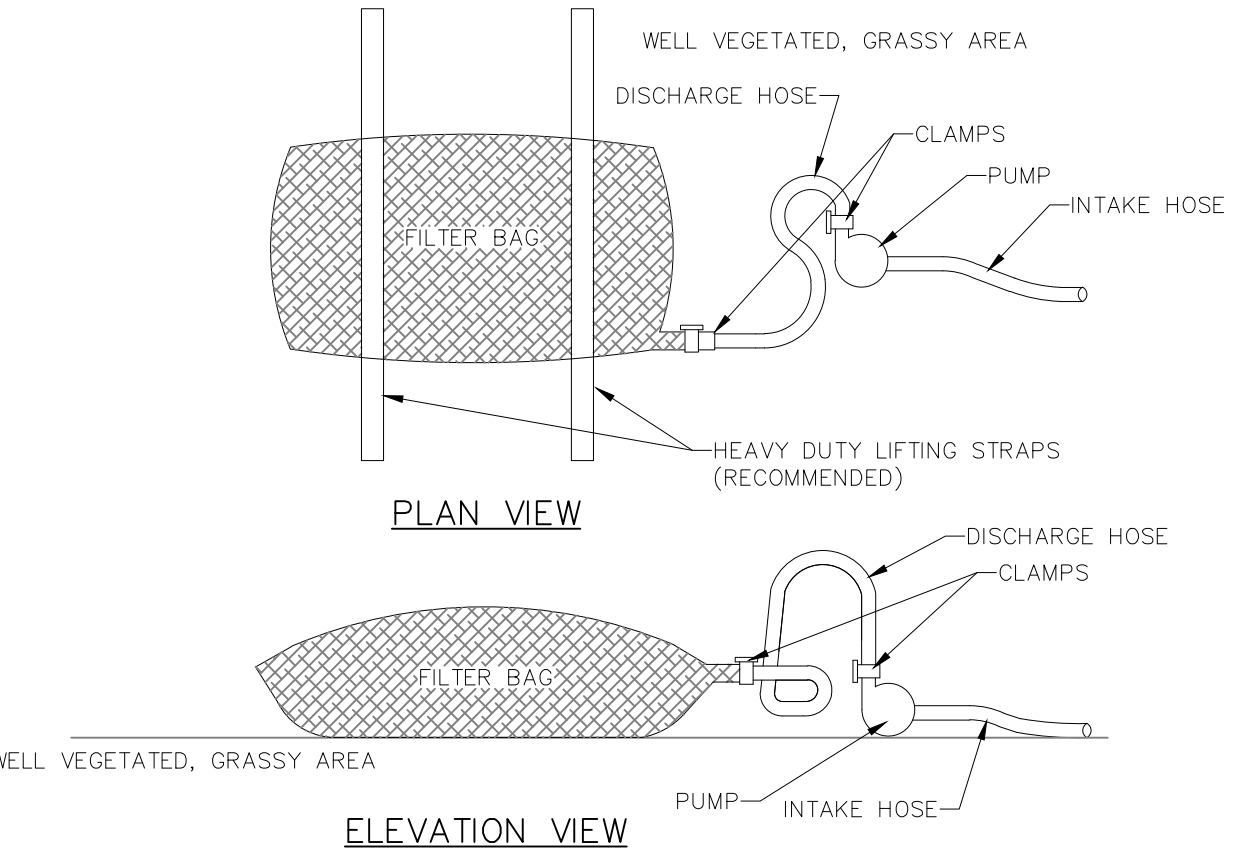


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

- 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:

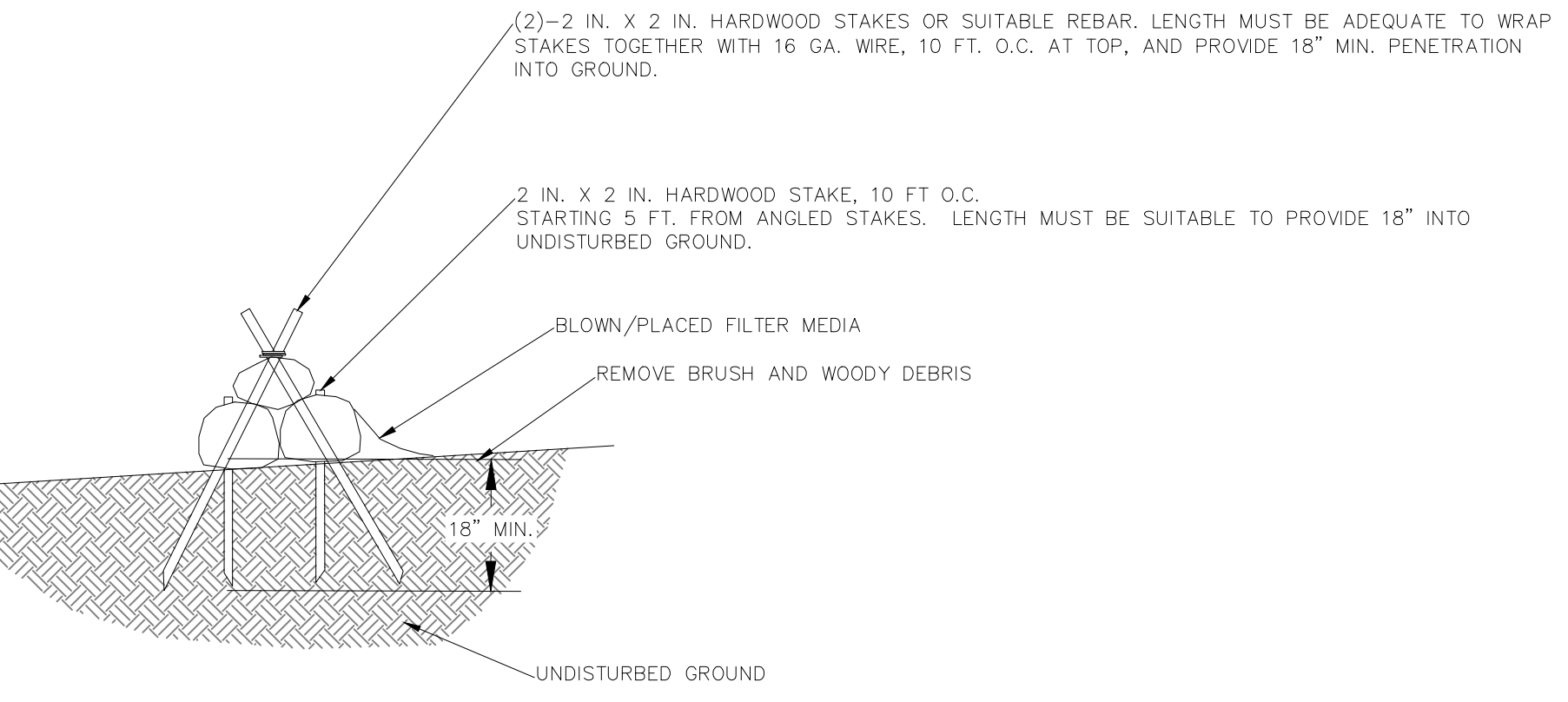
LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

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
LIV 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 HO OR EY 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 SORRENED.
- 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.

Centre Region Parks & Recreation
 2943 Gateway Drive, Suite F1
 State College, PA 16801
 Phone: (814) 231-3071
 Fax: (814) 235-7832
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 MECHANICAL & ELECTRICAL CONSULTANTS
 220 WEST COLLEGE AVENUE PROJECT NO. E3005
 STATE COLLEGE, PA 16801 © 2018 PENOE ENGINEERING, LLC
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BSA LLA
 182 FAIRMOUNT DRIVE
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SSE PROJECT No: 16-248
 DRAWN BY: CHECKED BY:

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

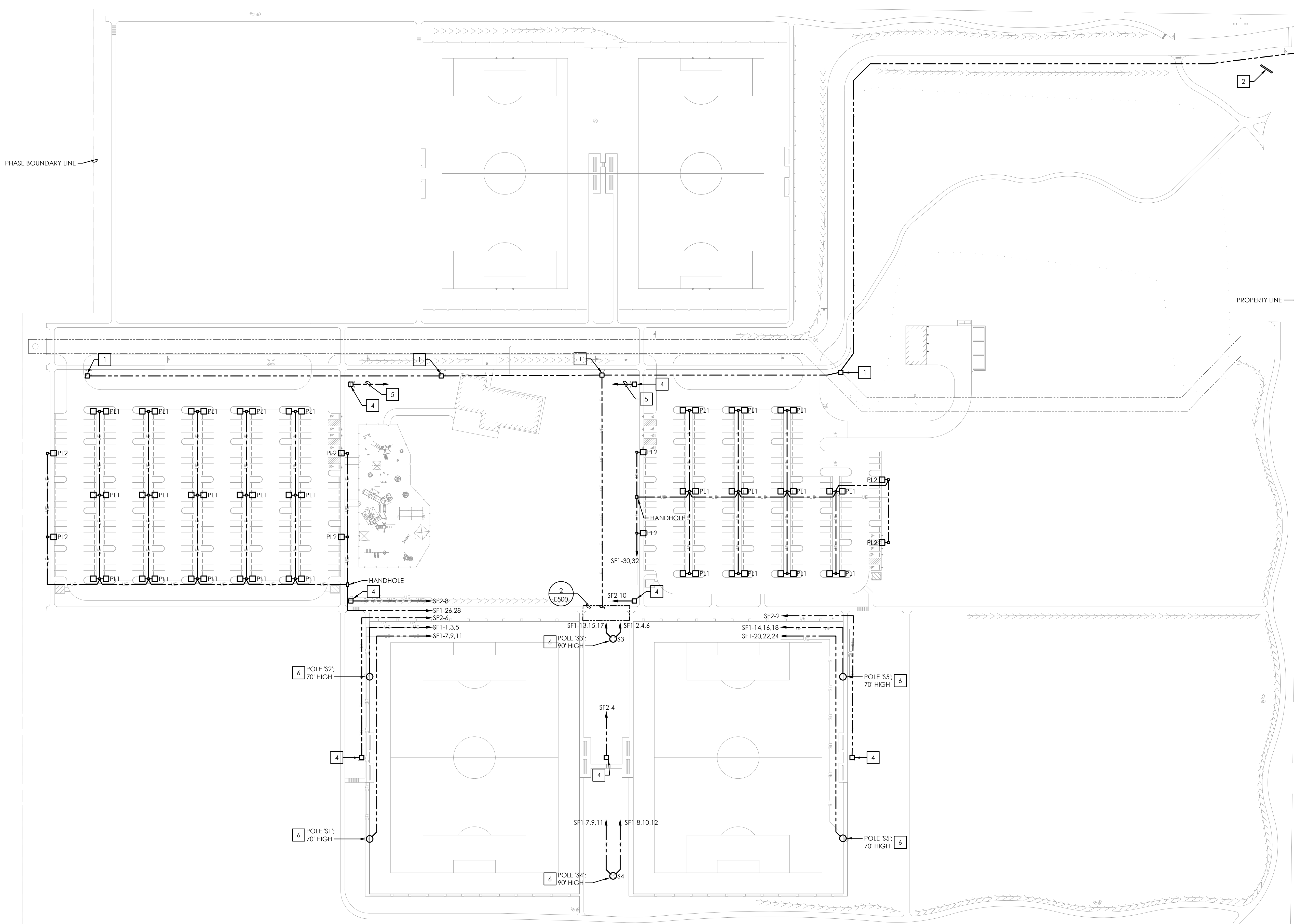
DATE	DESCRIPTION
06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

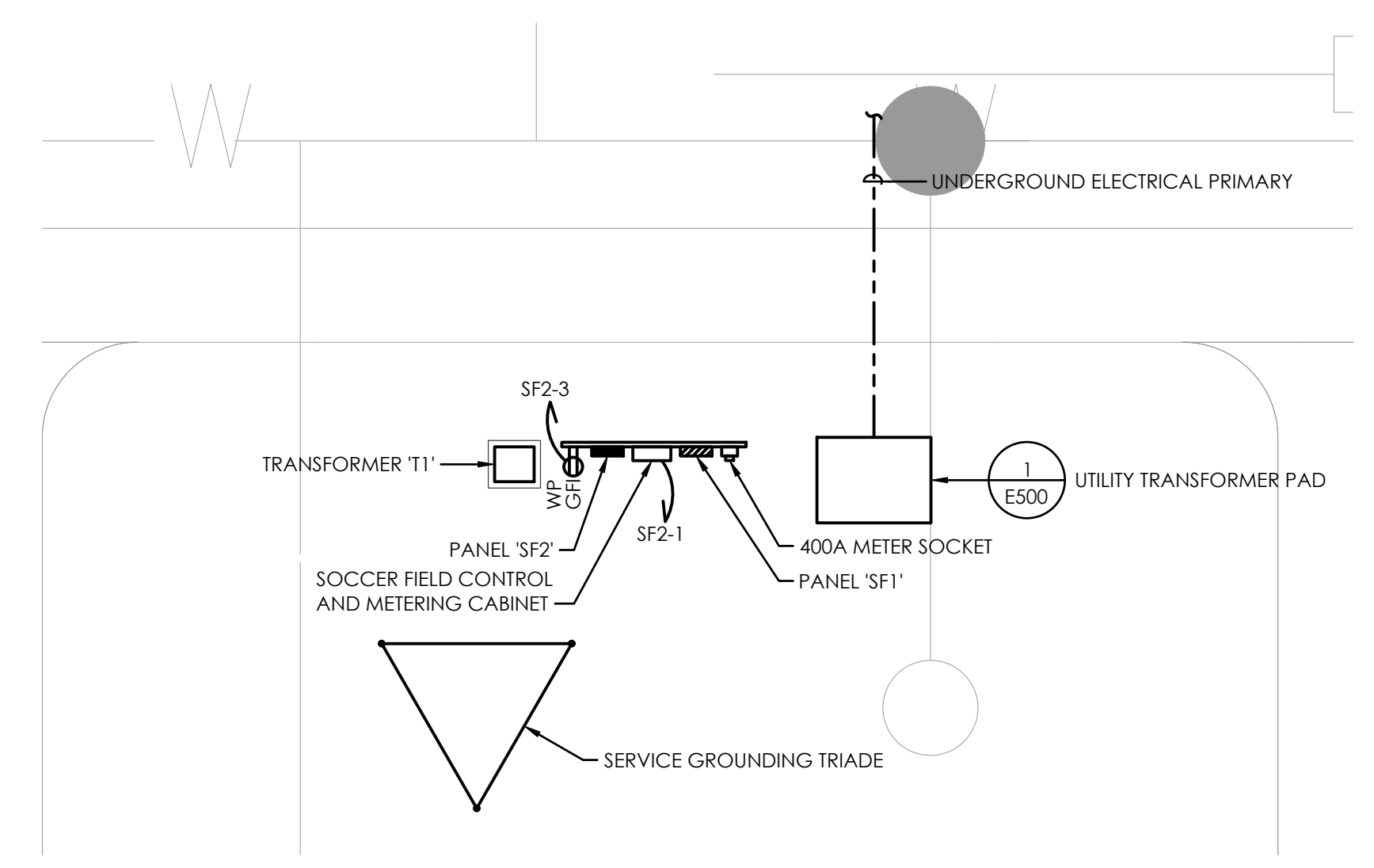
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SHEET NAME
EROSION AND SEDIMENTATION CONTROL DETAILS

C108.9



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



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

PANELBOARD SCHEDULE: PANELBOARD 'SF1'
VOLTAGE RATINGS: 277/480V, 3PH, 4W + G MNS TYPE: 300A MCB BUS RATING: 400 A MIN. AIC RATING: 65,000 A ENCL. RATING: NEMA 4X FEED-THRU LUGS: NO LOCATION: SOCCER FIELDS

CKT NO.	FEEDER	LOAD DESCRIPTION	BKR	LOAD (KVA)			BKR	LOAD DESCRIPTION	FEEDER	CKT NO.
				A	B	C				
1	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S1	3	5.76	5.76		30	3	40.4G	2
3	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S2	3	5.76	5.76	5.76	30	3	40.4G	4
7	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S3	3	5.76	5.76	5.76	30	3	40.4G	8
9	40.4G	SOCCER FIELD #WH1 LIGHTING - POLE S4	3	6.46	5.76		30	3	40.4G	10
11	40.4G	SOCCER FIELD #WH1 LIGHTING - POLE S5	3	6.46	5.76	5.76	30	3	40.4G	12
13	40.4G	SOCCER FIELD #WH1 LIGHTING - POLE S6	3	6.46	5.76	5.76	30	3	40.4G	14
15	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S7	3	6.46	5.76		30	3	40.4G	16
17	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S8	3	6.46	5.76	6.46	30	3	40.4G	18
19	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S9	3	6.46	5.76	6.46	30	3	40.4G	20
21	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S10	3	6.46	5.76	6.46	30	3	40.4G	22
23	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S11	3	6.46	5.76	6.46	30	3	40.4G	24
25	40.4G	SOCCER FIELD #WH2 LIGHTING - POLE S12	3	6.46	5.76	6.46	30	3	40.4G	26
27	30.3G	PANELBOARD SF2	3	0.00	0.00	0.00	20	2	40.2G	28
29	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	30
31	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	32
33	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	34
35	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	36
37	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	38
39	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	40
41	-	PROVISIONS	-	0.00	0.00	0.00	20	2	40.2G	42
PANELBOARD NOTES:				47.50	47.50	47.50				

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 RATINGS: 120/208V, 3PH, 4W + G MNS TYPE: 50A MCB BUS RATING: 100 A MIN. AIC RATING: 22,000 A ENCL. RATING: NEMA 4X FEED-THRU LUGS: NO LOCATION: SOCCER FIELDS

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

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	LIGHT SOURCE	VOLTAGE (V)	LUMINAIRE WATTS (W)	PERFORMANCE			DIMMING STYLE	CRI (MINIMUM)	LUMEN MAINT.	MOUNTING		COMMENTS
						DELIVERED LUMENS (LM)	COLOR TEMP (K)	TYPE				HEIGHT (AFF)		
PL1	LITHONIA - D-SERIES SIZE D AREA OR APPROVED EQUAL BY HUBBELL OR USI	261 x 137W x 7'D POLE MOUNTED LED AREA LUMINAIRE, DIE-CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINK, DARK BRONZE FINISH, TYPE II MEDIUM DISTRIBUTION OPTICS, IP66 RATING, 22" OF SQUARE POLE WITH DARK BRONZE FINISH.	LED	UNV/ MVOLT	38.0	4700	4000	0-10	70	L85-B 100,000 HRS	POLE	25'-0"	MOUNT FIXTURE TO 4" SQUARE ALUMINUM POLE (SAME MANUFACTURER AND FINISH. REFER TO DETAIL 3550 FOR POLE AND BASE INSTALLATION DETAILS.	
PL2	LITHONIA - D-SERIES SIZE D AREA OR APPROVED EQUAL BY HUBBELL OR USI	261 x 137W 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" OF SQUARE POLE WITH DARK BRONZE FINISH, HOUSE SIDE SHIELD.	LED	UNV/ MVOLT	38.0	4700	4000	0-10	70	L85-B 100,000 HRS	POLE	25'-0"	MOUNT FIXTURE TO 4" SQUARE ALUMINUM POLE (SAME MANUFACTURER AND FINISH. REFER TO DETAIL 3550 FOR POLE AND BASE INSTALLATION DETAILS.	

NOTES:
1. BASED ON AMPS PER DRIVER.

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF LUMINAIRE HEADS	# OF DRIVERS	VOLTAGE	PHASE	FULL LOAD AMPS *	CONTRACTOR SIZE (A)	CONTRACTOR 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	KEY	NO. SETS	CONDUCTORS (AWG - KCMIL) (PER SET)	PATHWAY (PER SET)	CONDUCTOR TEMP. RATING	KEY	NO. SETS	CONDUCTORS (AWG - KCMIL) (PER SET)	PATHWAY (PER SET)	CONDUCTOR TEMP. RATING
20.2G	1	2#12 & 1#12S	3/4" C	60° C	20.4G	1	4#12 & 1#12G	3/4" C	60° C	20.4G	1	4#12 & 1#12G	3/4" C	60° C
30.2G	1	2#10 & 1#10G	3/4" C	60° C	30.4G	1	4#10 & 1#10G	3/4" C	60° C	40.2G	1	4#8 & 1#10G	3/4" C	60° C
40.2G	1	2#8 & 1#10G	3/4" C	60° C	40.3G	1	3#8 & 1#10G	3/4" C	60° C	40.4G	1	4#8 & 1#10G	3/4" C	60° C
55.2G	1	2#6 & 1#10G	3/4" C	60° C	55.3G	1	3#6 & 1#10G	3/4" C	60° C	55.4G	1	4#6 & 1#10G	1" C	60° C
70.2G	1	2#4 & 1#8G	3/4" C	60° C	70.3G	1	3#4 & 1#8G	1" C	60° C	70.4G	1	4#4 & 1#8G	1-1/4" C	60° C
85.2G	1	2#3 & 1#8G	1" C	60° C	85.3G	1	3#3 & 1#8G	1" C	60° C	85.4G	1	4#3 & 1#8G	1-1/4" C	60° C
95.2G	1	2#2 & 1#8G	1" C	60° C	95.3G	1	3#2 & 1#8G	1-1/4" C	60° C	95.4G	1	4#2 & 1#8G	1-1/4" C	60° C
100.2G	1	2#3 & 1#8G	1" C	75° C	100.3G	1	3#3 & 1#8G	1-1/4" C	75° C	100.4G	1	4#3 & 1#8G	1-1/4" C	75° C
400.2G	1	2#400 & 1#3G	2-1/2" C	75° C	400.3G	1	3#400 & 1#3G	3" C	75° C	400.4G	1	4#400 & 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 (149°F).
(2) CONDUCTORS WITH HIGHER TEMPERATURE RATINGS, PROVIDED THE AMPACITY OF SUCH CONDUCTORS IS DETERMINED BASED ON THE 60°C (149°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) OR 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 SIZE BASED ON 90°C RATED CONDUCTORS WITH 30MIN 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:

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

KEY NOTES:

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

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

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

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

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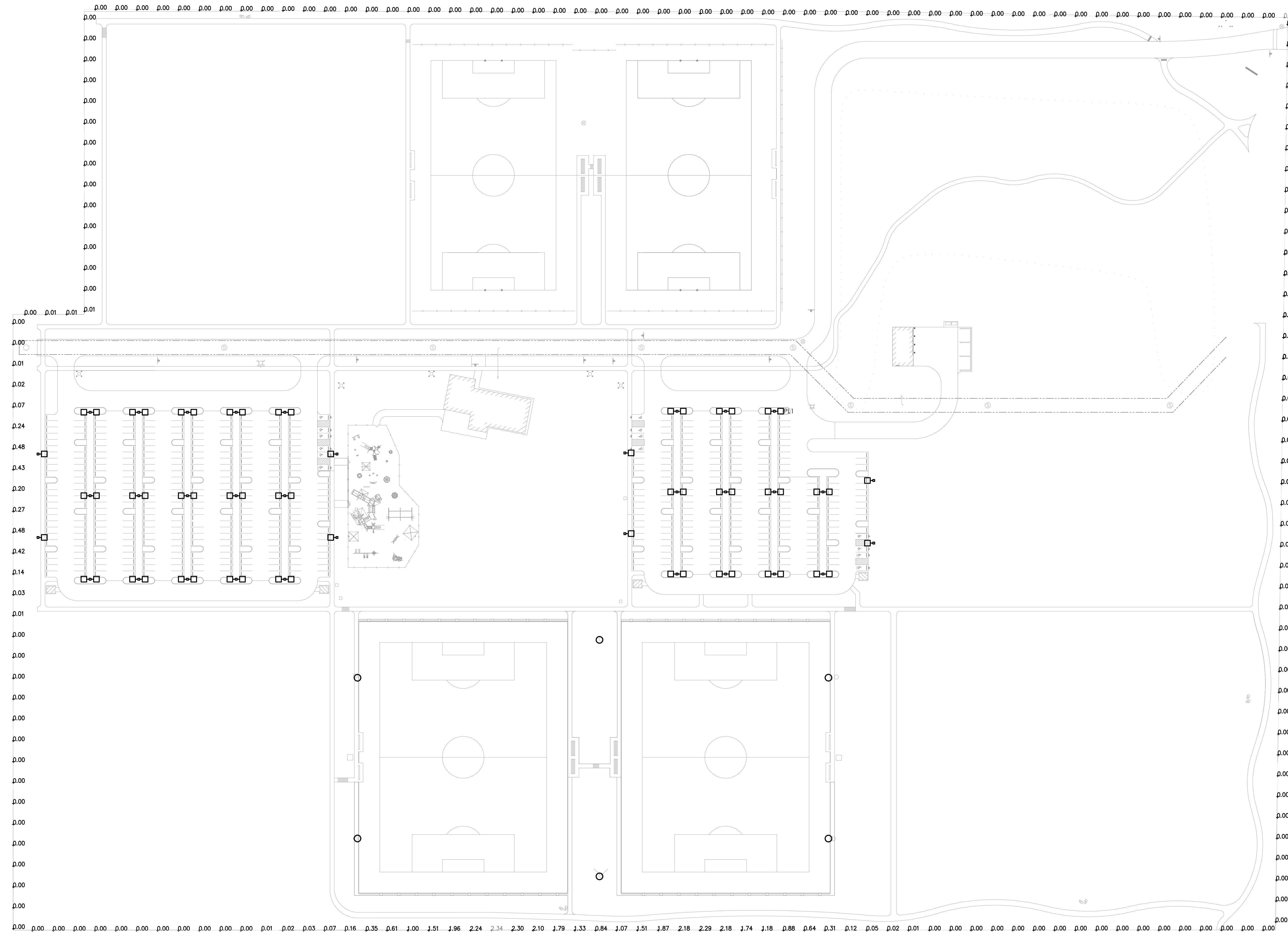
SYM	DATE	DESCRIPTION

SUBMISSIONS

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06/07/19	TWP. SUBMISSION 1
10/02/19	TWP. SUBMISSION 2

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>



1 LIGHTING 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 3' ABOVE GRADE.

ABBREVIATIONS

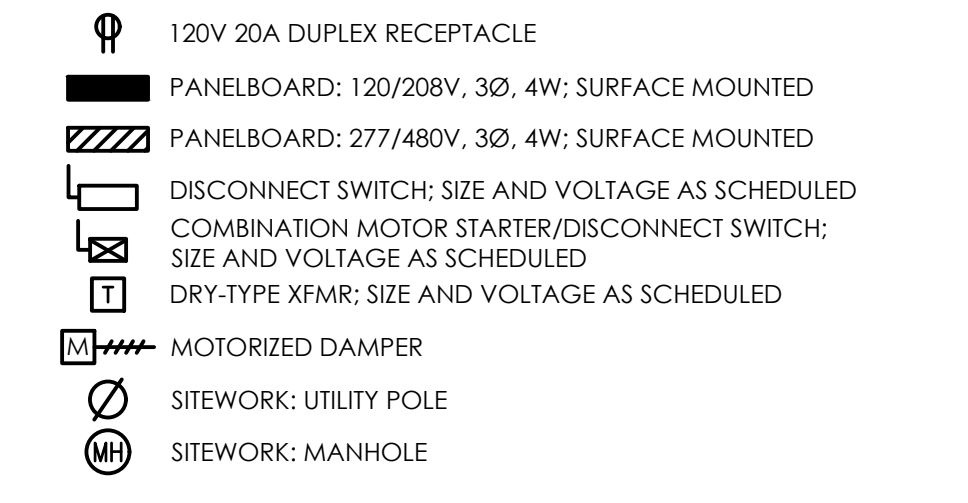
&	AND
°	DEGREES
∅	PHASE
(E)	EXISTING
(R)	RELOCATED
A	AMPS
AC	ABOVE COUNTER
AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT CIRCUIT INTERRUPTOR
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CU	COPPER
DISC	DISCONNECT
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
GF	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
LTC	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
MOCB	MAXIMUM OVERCURRENT PROTECTION DEVICE
MTD	MOUNTED
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
XFM	TRANSFORMER

GENERAL REQUIREMENTS

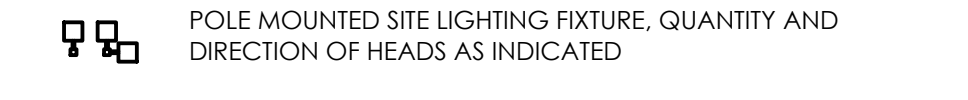
- A. GENERAL:**
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY SHOW ALL OFFSETS AND FITTINGS THAT WILL BE REQUIRED. COORDINATE CAREFULLY WITH EXISTING UTILITIES, EQUIPMENT AND STRUCTURE.
 - IT IS THE GENERAL INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE CONTRACTOR FURNISH AND 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.
 - 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.
 - REPORT ANY OBSERVED CODE VIOLATIONS OF EXISTING SYSTEMS TO ENGINEER.
 - 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.
 - 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.
 - 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.
 - 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.
 - COORDINATION: ELECTRICAL CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL ELECTRICAL OUTAGES WITH THE OWNER, A MINIMUM OF TWO WEEK (14-DAYS) PRIOR TO SHUTDOWN.
 - SHOP DRAWINGS AND PRODUCT DATA.
 - ALL EQUIPMENT MATERIALS SHALL BE AS SPECIFIED HEREIN.
 - THE FOLLOWING MATERIALS AND EQUIPMENT SHALL BE SUBMITTED:
 - GALVANIZED STAINLESS STEEL.
 - FIRESTOPPING MATERIALS.
 - TRANSFORMERS.
 - SERVICE SWITCHES AND GANG METERS.
 - PANELBOARDS & CIRCUIT BREAKERS.
 - DISCONNECT SWITCHES.
 - LIGHTING FIXTURES AND LAMPS.
 - DEVICES, FACEPLATES AND BOXES.
 - RECEPTACLES.
 - LIGHTING SWITCHES AND CONTROLS.
 - TELECOMMUNICATIONS OUTLETS & CABLING.
 - BUILDING POWER WIRING AND CONDUIT.
 - FIRE ALARM SYSTEM AND COMPONENTS (DETECTION AND NOTIFICATION APPLIANCES, ETC.).
- B. 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

- 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:**
- 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.
 - PROVIDE ALL CUTTING AND PATCHING FOR MINOR OPENINGS, AND REPAIR ALL DAMAGED AREAS. PAINT SHALL MATCH EXISTING SURROUNDINGS.
 - 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.
- 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:**
- CLEAN ALL WORK AT PROJECT COMPLETION, SUBJECT TO ACCEPTANCE OF OWNER.
 - MAINTAIN A RECORD SET OF DRAWINGS SHOWING ALL CHANGES DURING CONSTRUCTION PROCESS. DELIVER THESE RECORD DRAWINGS TO ARCHITECT AT COMPLETION OF PROJECT.

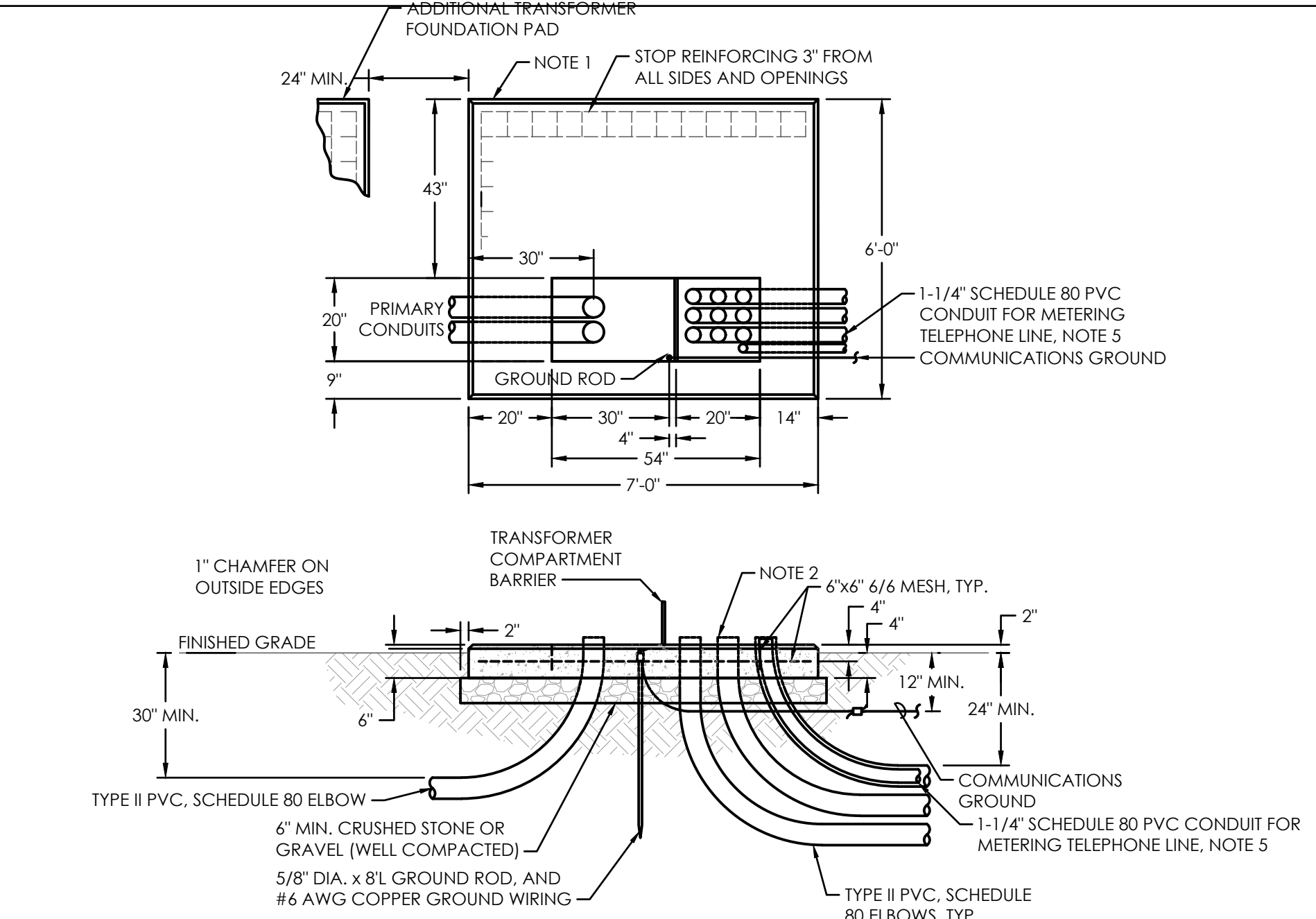
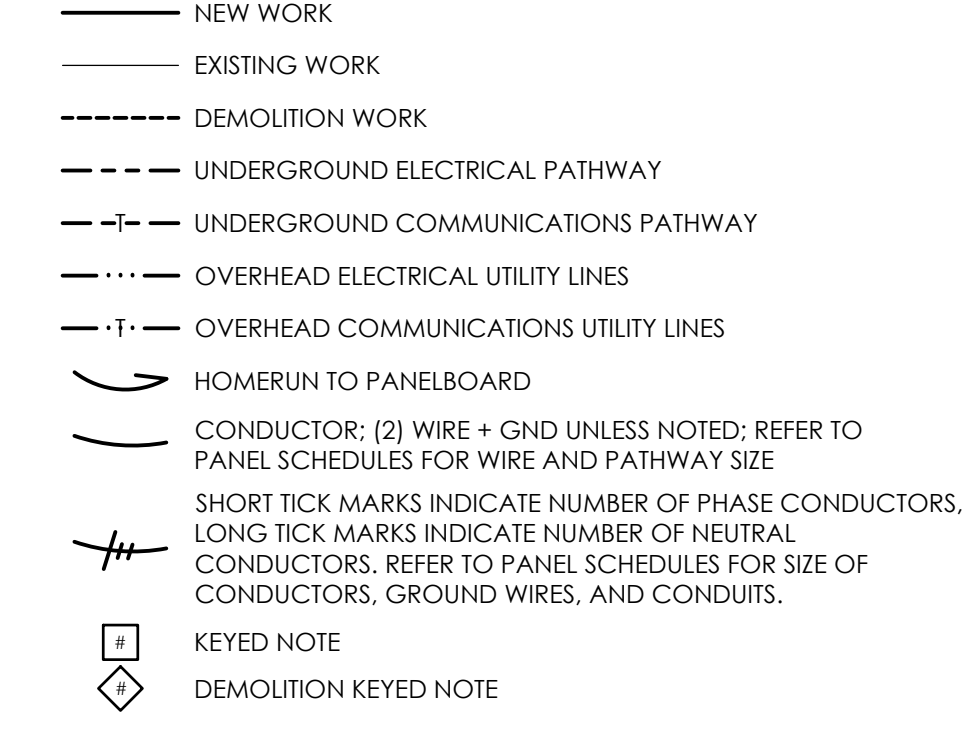
ELECTRICAL SYMBOLS



LIGHTING SYMBOLS

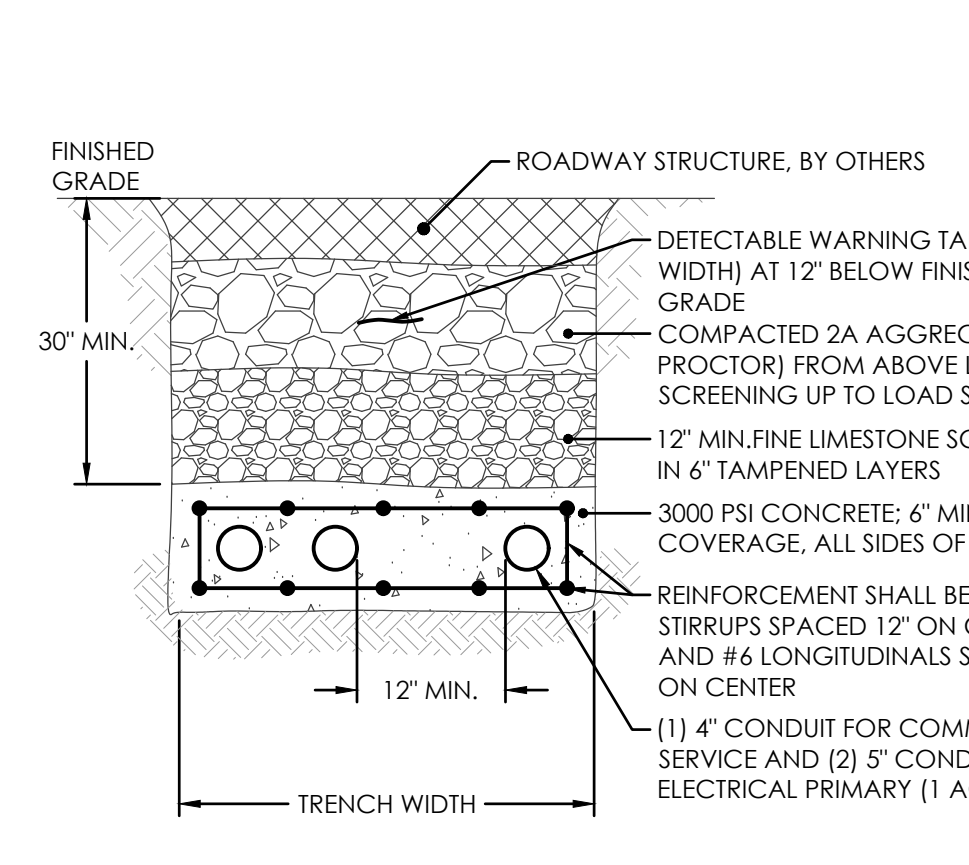


MISC. SYMBOLS

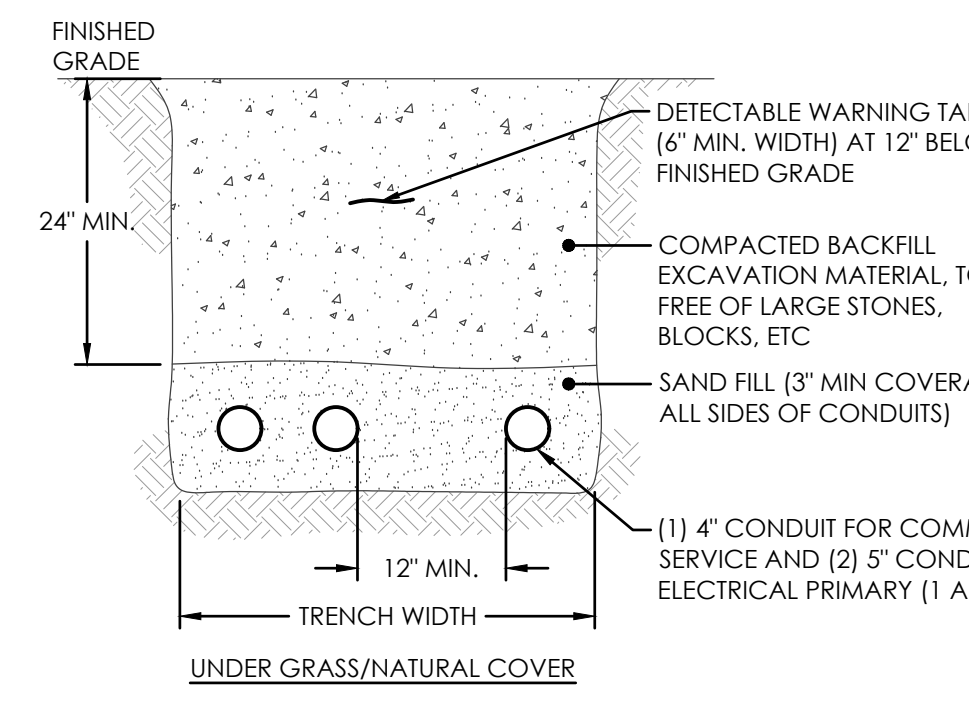


DETAIL NOTES:

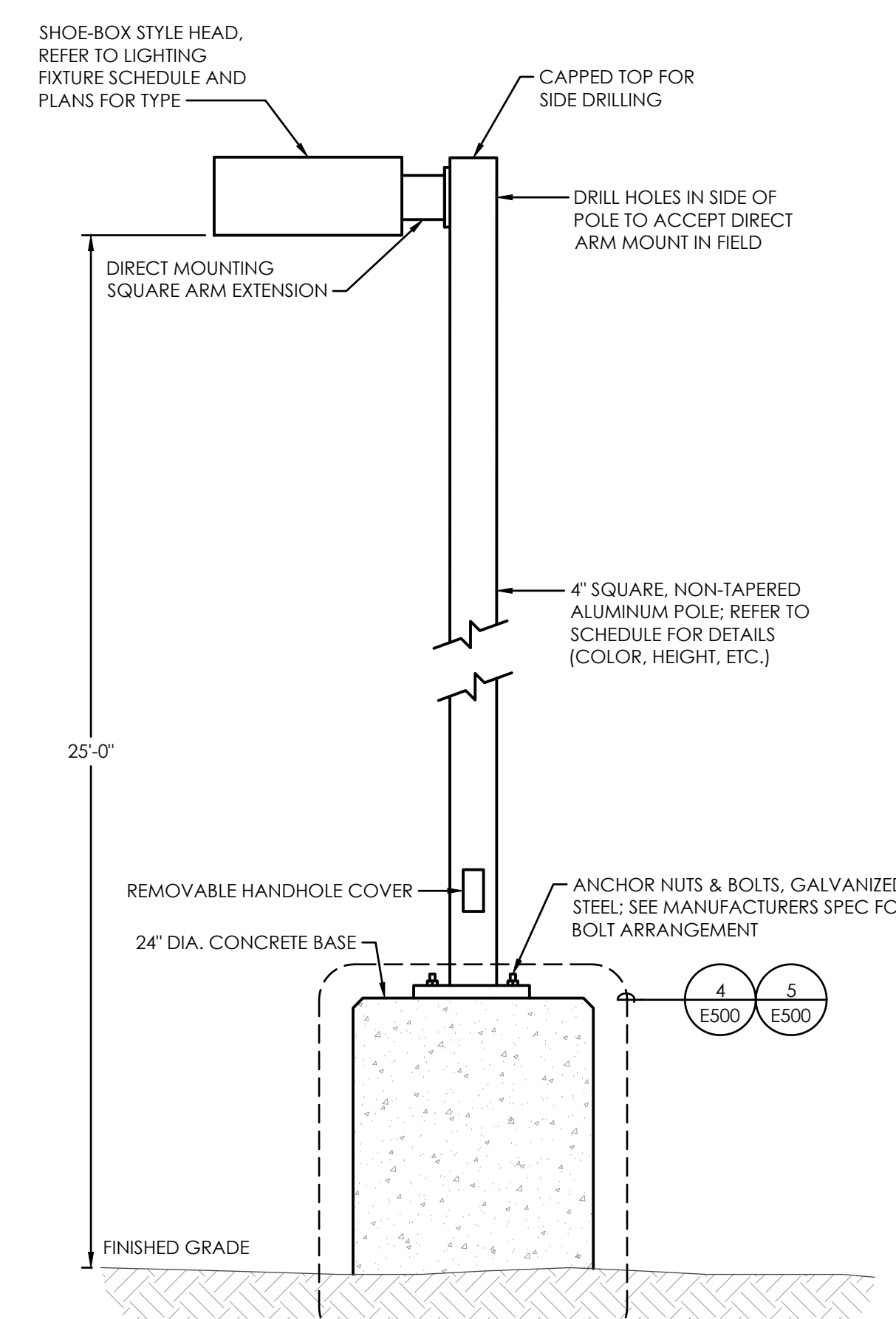
- ELECTRICAL CONTRACTOR SHALL CONTACT THE UTILITY COMPANY ON BEHALF OF THE OWNER PRIOR TO BEGINNING WORK TO DISCUSS THE DETAILS OF TRANSFORMER FOUNDATION POSITION AND ORIENTATION, WORKING CLEARANCES, BARRIER PROTECTION, CONSTRUCTION SPECIFICATIONS, AND INSPECTION PROCEDURES. THE ELECTRICAL CONTRACTOR 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).
- SECONDARY CONDUITS SHALL NOT 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.
- INSTALL ALL CONDUITS BEFORE PLACING PAD. CONDUITS SHOULD NOT BE PLACED UNDER SECTIONS OF PAD SUPPORTING TRANSFORMER SO THAT ORIGINAL GROUND WILL NOT BE DESTROYED.
- 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.
- THOROUGHLY COMPACT BASE CRUSHED STONE OR GRAVEL.
- CONCRETE PAD MAY BE POURED IN-PLACE OR MAY BE PRECAST (4000 MIN. PSI CONCRETE).
- TO PREVENT WATER MIGRATION FROM CONCRETE WHEN POURING, PLACE WATERPROOF MEMBRANE ON CRUSHED STONE OR GRAVEL BEFORE POURING CONCRETE.
- REINFORCING WIRE MESH SHALL CONFORM TO ASTM DESIGNATION A185.
- CEMENT TO BE 1 OR 1-A AND MEETING ASTM DESIGNATIONS C-150 AND C-175 RESPECTIVELY.
- 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.
- SEAL ALL OPENINGS AROUND CONDUITS WITH GROUT; CAP ALL SPARE CONDUITS TO PREVENT ENTRY OF RODENTS AND ANIMALS INTO TRANSFORMER COMPARTMENT.
- IF CONDUIT EXTENDS INTO BUILDING, IT SHALL BE SEALED (PER NEC) AT BUILDING END TO PREVENT GAS FROM ENTERING BUILDING THROUGH THE CONDUIT.
- COMMUNICATION GROUNDING - THE NEC 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.
- 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.



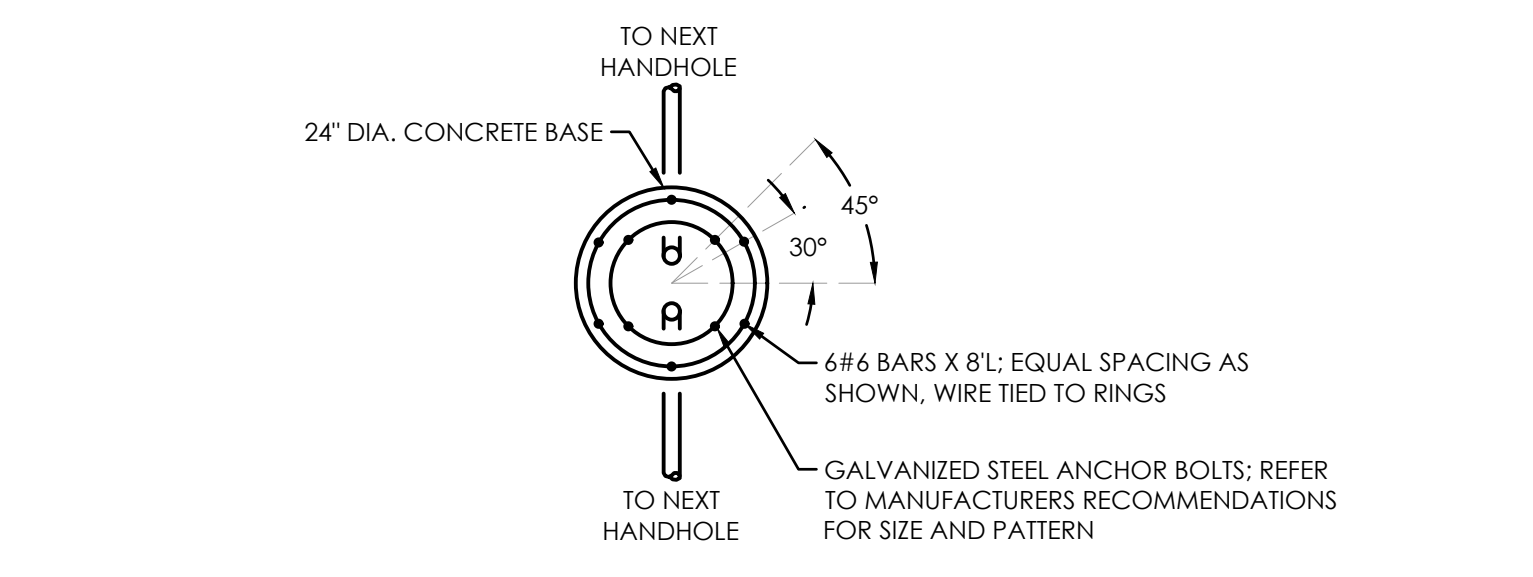
2 UTILITY DUCTBANK
E500 SCALE: NOT TO SCALE



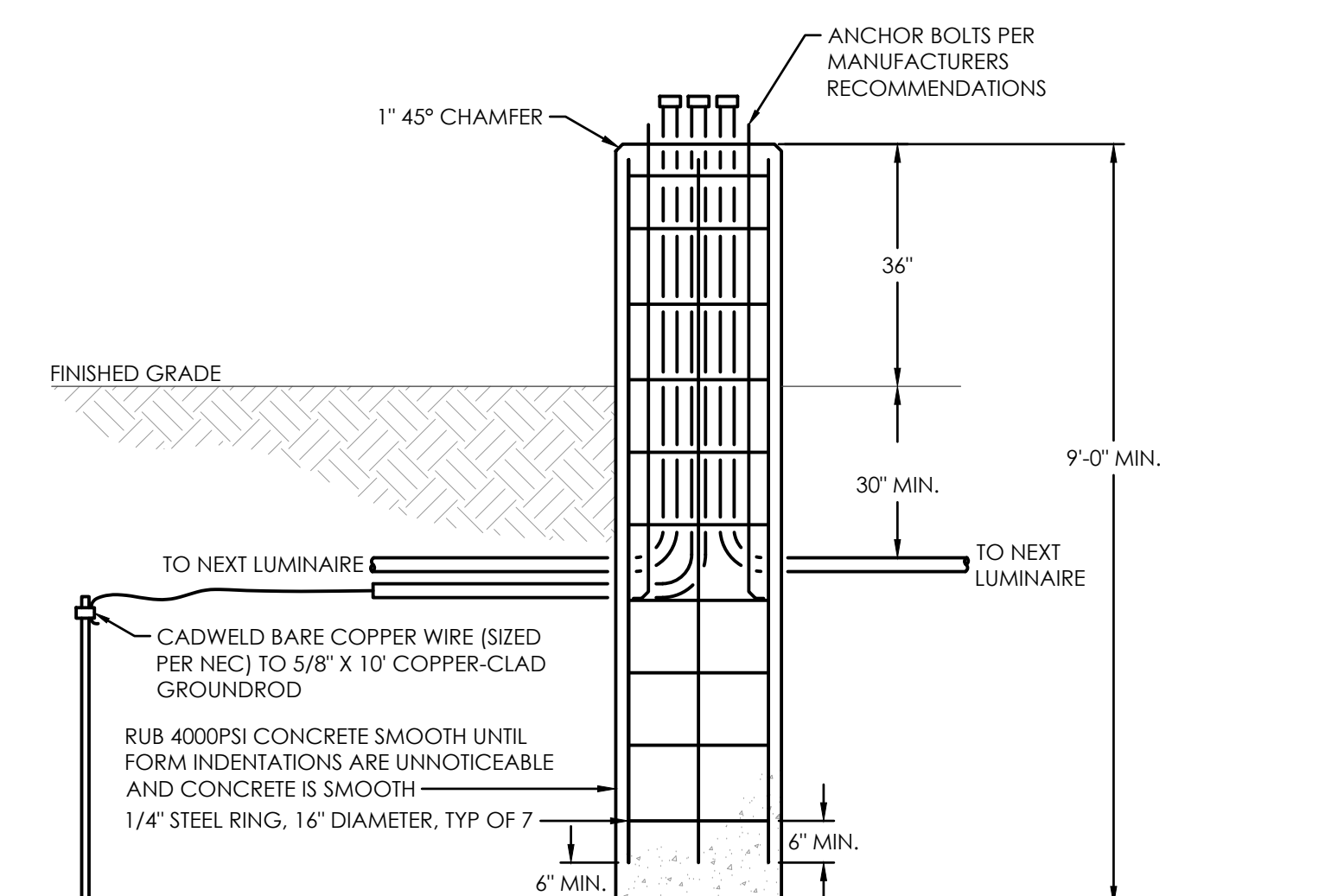
2 UTILITY DUCTBANK
E500 SCALE: NOT TO SCALE



3 POLE MOUNTED LUMINAIRE DETAIL (PL1 & PL2)
E500 SCALE: NOT TO SCALE

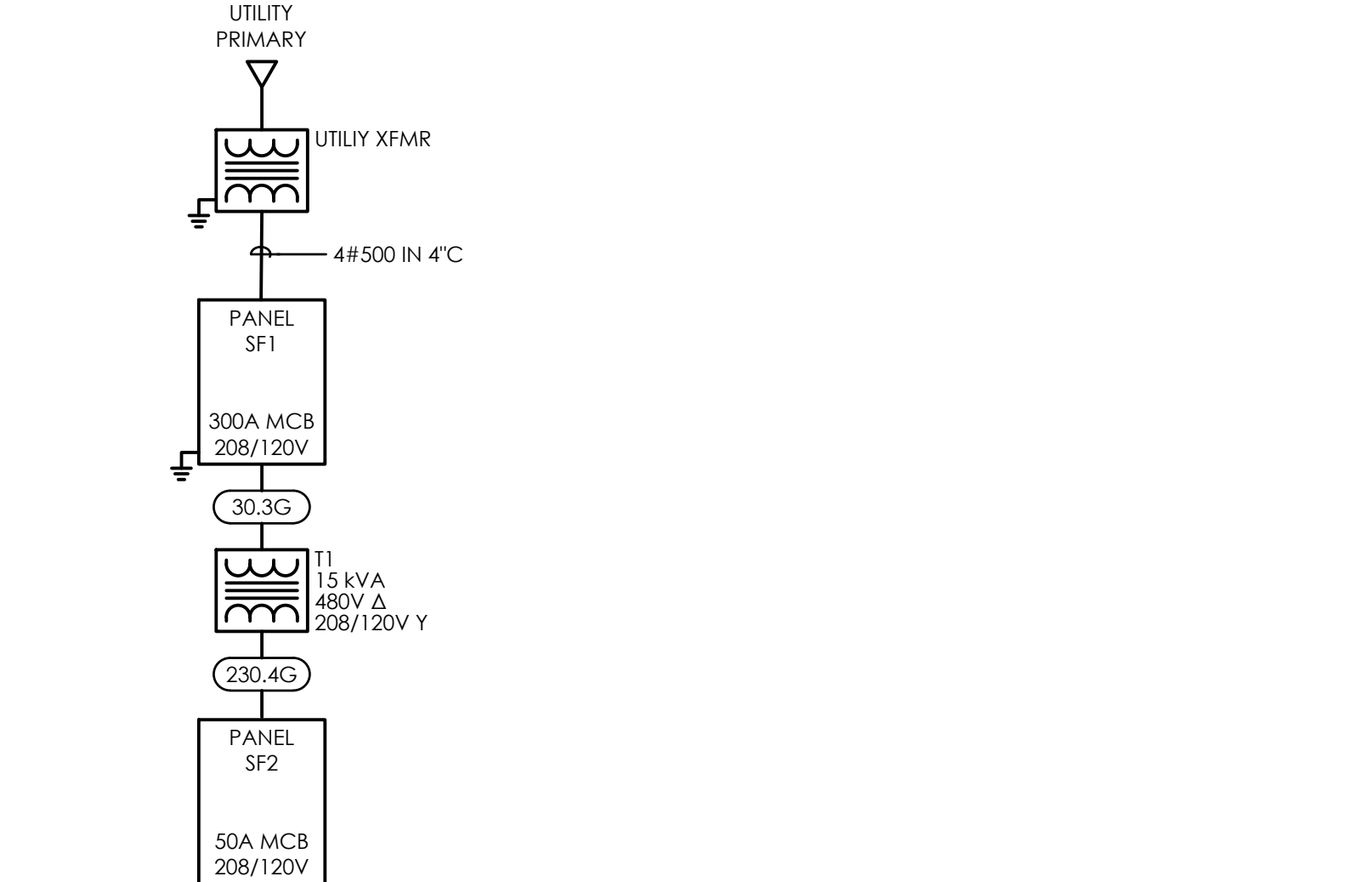


4 POLE MOUNTED LUMINAIRE BASE DETAIL (PL1 & PL2) - PLAN
E500 SCALE: NOT TO SCALE

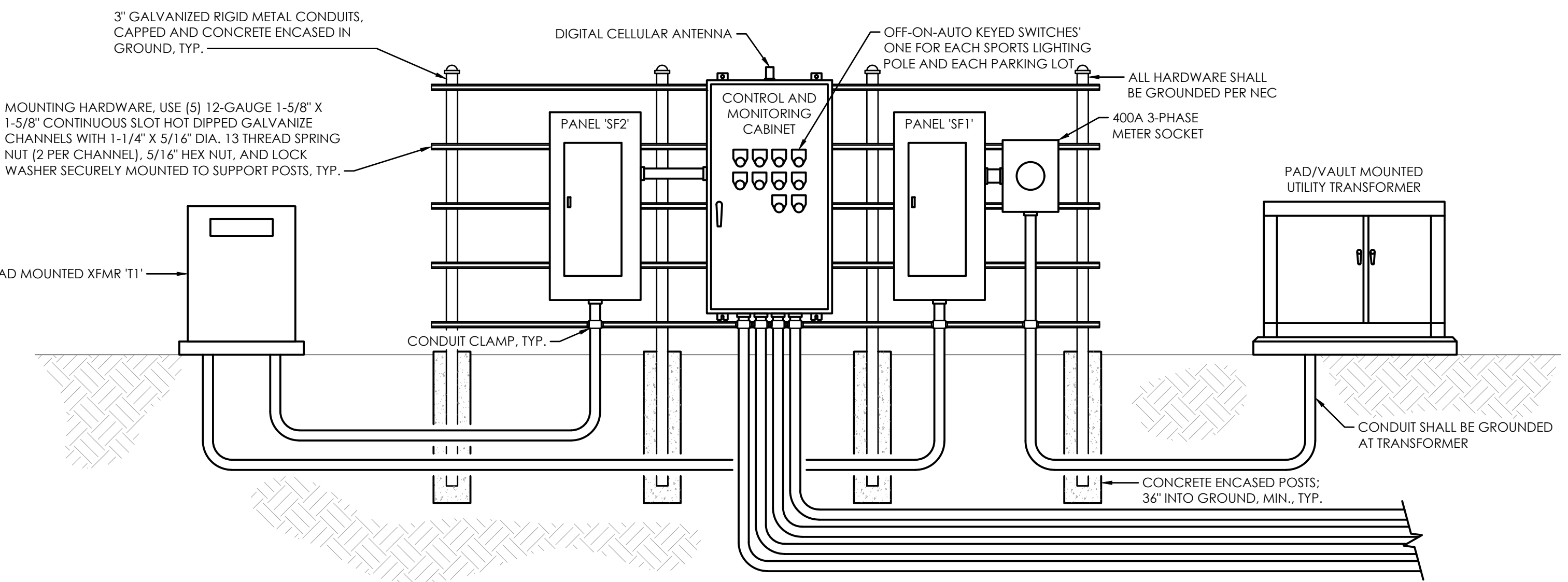


5 POLE MOUNTED LUMINAIRE BASE DETAIL (PL1 & PL2) - ELEVATION
E500 SCALE: NOT TO SCALE

1 3-PHASE PAD-MOUNTED UTILITY TRANSFORMER FOUNDATION
E500 SCALE: NOT TO SCALE



6 ONE-LINE DIAGRAM
E500 SCALE: NOT TO SCALE



8 SOCCER FIELD ELECTRICAL SERVICE ELEVATION
E500 SCALE: NOT TO SCALE

CENTRE REGION Parks & Recreation
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STATE COLLEGE, PA 16801 © 2018 PENOE ENGINEERING, LLC
#434-0786

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

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

SHEET NAME
DETAILS - ELECTRICAL

E500

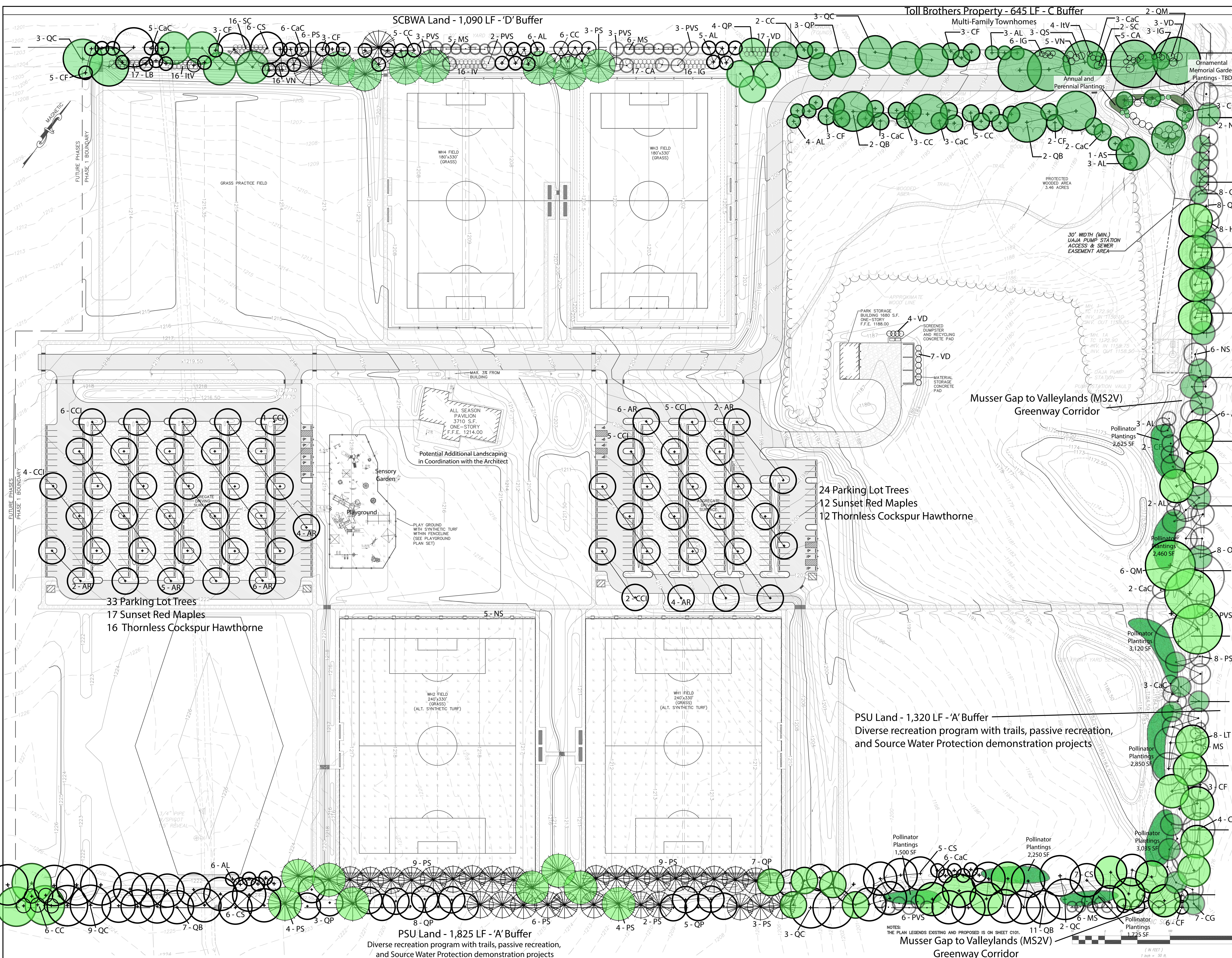
S/N	DATE	DESCRIPTION
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10/02/19	TWP. SUBMISSION 2	

SUBMISSIONS

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

**WHITEHALL
ROAD
REGIONAL
PARK
PHASE 1**

<PRELIMINARY
NOT FOR
CONSTRUCTION>



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

24 Parking Lot Trees
12 Sunset Red Maples
12 Thornless Cockspur Hawthorne

33 Parking Lot Trees
17 Sunset Red Maples
16 Thornless Cockspur Hawthorne

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

**Musser Gap to Valleylands (MS2V)
Greenway Corridor**

Pollinator
Plantings
1,500 SF

Pollinator
Plantings
2,250 SF

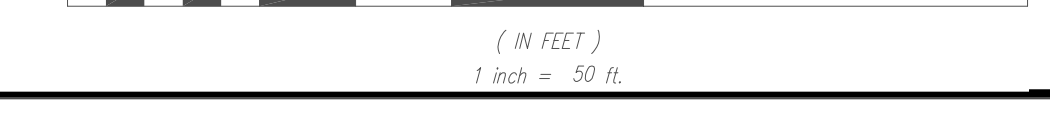
Pollinator
Plantings
2,850 SF

Pollinator
Plantings
3,120 SF

Pollinator
Plantings
2,460 SF

Pollinator
Plantings
2,625 SF

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



REVISIONS	
SYM	DESCRIPTION

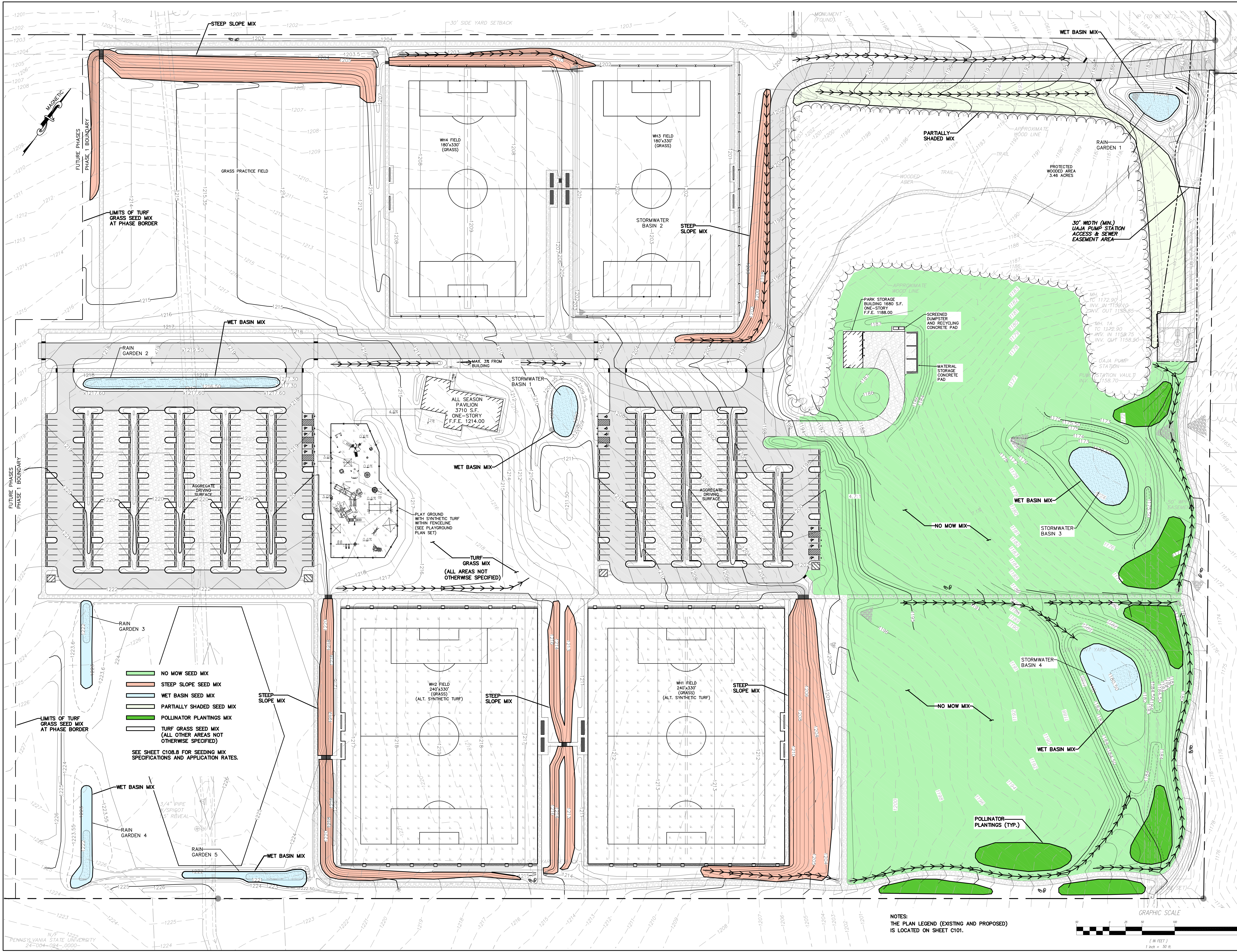
SUBMISSIONS	
DATE	DESCRIPTION
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10/02/19	TWP. SUBMISSION 2

**WHITEHALL
 ROAD
 REGIONAL
 PARK
 PHASE 1**

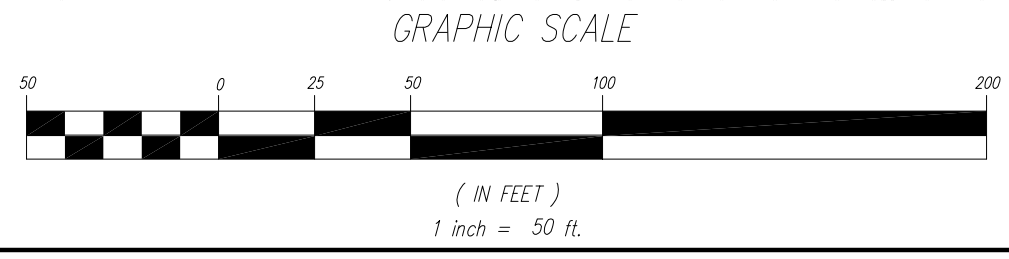
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 NOT FOR
 CONSTRUCTION>

SHEET NAME
SEEDING PLAN

L100.1



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



Required Landscape Plantings

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	11+5+1**=17	
AS	Acer saccharum Sugar Maple	1.5" Cal.	B&B	70'	75'		2	
QB	Quercus bicolor Swamp White Oak	1.5" Cal.	7 gal. or bareroot	55'	50'		4	
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	60'	50'		3	
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	65'	65'		3	
Understory Trees / Evergreen						32	11+28**+3**=42	
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		10	
CaC	Carpinus caroliniana American Hornbeam	1" Cal.	5 gal. or bareroot	25'	25'		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+0**+30**=58	
CA	Clethra alnifolia Sweet Pepperbush	#2 Gal	3-4' Ht.	5'	5'		5	
IG	Ilex glabra Inkberry	#2 Gal	3-4' Ht.	5'	5'		9	
ITV	Itea virginica Virginia Sweetspire	#2 Gal	3-4' Ht.	8'	8'		4	
SC	Sambucus Canadensis American Black Elderberry	#2 Gal	3-4' Ht.	10'+	10'+		2	
VN	Viburnum nudum Possum Haw Viburnum	#2 Gal	3-4' Ht.	8'+	8'		5	
VD	Viburnum dentatum Arrowwood Viburnum	#2 Gal	3-4' Ht.	8'+	8'+		3	
Habitat and Pollinator Plantings						Additional Landscape Plantings **		
Forested Edge / Flowering Roadside Mix lbs.						16,000 SF / 0.37 Acres	See Sheet C108.8	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	
TBD	Large Shrubs (14) TBD	3 Gal	3-4' Ht.	12'	12'		14	
TBD	Small Shrubs (16) TBD	3 Gal	3-4' Ht.	8'	8'		16	
Annual and Perennial Planting Beds						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	
CS	Catalpa speciosa Catalpa	1.5" Cal.	7 gal. or bareroot	50'	40'		6	
PS	Pinus strobus White Pine	1.5" Cal.	B&B	70'	50'		9	
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	60'	50'		3	
QP	Quercus phellos Willow Oak	1.5" Cal.	7 gal. or bareroot	50'	40'		4	
Understory						65	65	
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		11	
CaC	Carpinus caroliniana American Hornbeam	1" Cal.	5 gal. or bareroot	25'	25'		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	
PVS	Prunus sargentii 'Sargent's' Sargent Cherry	1" Cal.	5 gal. or bareroot	35'	30'		10	
Shrubs						131	131	
CA	Clethra alnifolia Sweet Pepperbush	#2 Gal	3-4' Ht.	5'	5'		17	
IG	Ilex glabra Inkberry	#2 Gal	3-4' Ht.	5'	5'		16	
IV	Ilex verticillata Winterberry	#2 Gal	3-4' Ht.	5'	5'		16	
ITV	Itea virginica Virginia Sweetspire	#2 Gal	3-4' Ht.	8'	8'		16	
LB	Lindera benzoin Spicebush	#2 Gal	3-4' Ht.	8'	8'		17	
SC	Sambucus Canadensis American Black Elderberry	#2 Gal	3-4' Ht.	10'+	10'+		16	
VN	Viburnum nudum Possum Haw Viburnum	#2 Gal	3-4' Ht.	8'+	8'		16	
VD	Viburnum dentatum Arrowwood Viburnum	#2 Gal	3-4' Ht.	8'+	8'+		17	
Habitat and Pollinator Plantings						Additional Landscape Plantings **		
Pollinator Seed Mix lbs.						5,500 SF / 0.13 Acres	Mesic to Dry Native Pollinator Mix by Ernst Conservation Seed or approved equal See Sheet C108.8	
Little Bluestem Upland Meadow lbs.						26,000 SF / 0.61 Acres	Schizachyrium scoparium PA-Ecotype	

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	
CS	Catalpa speciosa Catalpa	1.5" Cal.	7 gal. or bareroot	50'	40'		18	
PS	Pinus strobus White Pine	1.5" Cal.	B&B	70'	50'		37	
QB	Quercus bicolor Swamp White Oak	1.5" Cal.	7 gal. or bareroot	55'	50'		18	
QC	Quercus coccinea Scarlet Oak	1.5" Cal.	7 gal. or bareroot	60'	50'		14	
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	
CaC	Carpinus caroliniana American Hornbeam	1" Cal.	5 gal. or bareroot	25'	25'		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	
PVS	Prunus sargentii 'Sargent's' Sargent Cherry	1" Cal.	5 gal. or bareroot	35'	30'		6	
Shrubs						0	0	
Habitat and Pollinator Plantings						Additional Landscape Plantings **		
Pollinator Seed Mix lbs.						5,500 SF / 0.13 Acres	Mesic to Dry Native Pollinator Mix by Ernst Conservation Seed or approved equal See Sheet C108.8	
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	
CG	Carya glabra Pignut Hickory	1.5" Cal.	7 gal. or bareroot	60'	35'		7	
CS	Catalpa speciosa Catalpa	1.5" Cal.	7 gal. or bareroot	50'	40'		4	
HC	Halesia carolina Carolina Silverbell	1.5" Cal.	7 gal. or bareroot	30'	35'		8	
LT	Liriodendron tulipifera Tulip Tree	1.5" Cal.	7 gal. or bareroot	70'	50'		8	
NS	Nyssa sylvatica Blackgum	1.5" Cal.	7 gal. or bareroot	40'	35'		8	
OV	Ostrya virginiana American Hophornbeam	1.5" Cal.	7 gal. or bareroot	40'	35'		8	
OA	Oxydendrum arboreum Sourwood	1.5" Cal.	7 gal. or bareroot	35'	25'		8	
PSC	Prunus sargentii 'Columnar' Sargent Cherry	1.5" Cal.	7 gal. or bareroot	30'	30'		8	
QB	Quercus bicolor Swamp White Oak	1.5" Cal.	7 gal. or bareroot	55'	50'		8	
QM	Quercus macrocarpa Burr Oak	1.5" Cal.	7 gal. or bareroot	70'	75'		6	
Understory						26	26	
AL	Amelanchier laevis Allegheny Serviceberry	1" Cal.	5 gal. or bareroot	20'	20'		5	
CaC	Carpinus caroliniana American Hornbeam	1" Cal.	5 gal. or bareroot	25'	25'		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	
PVS	Prunus sargentii 'Sargent's' Sargent Cherry	1" Cal.	5 gal. or bareroot	35'	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 See Sheet C108.8	
Pollinator Seed Mix lbs.						14,000 SF / 0.32 Acres	Mesic to Dry Native Pollinator Mix by Ernst Conservation Seed or approved equal See Sheet C108.8	
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	24	
AR	Acer rubrum 'Red Sunset' Red Sunset Red Maple	1.5" Cal.	B&B	50'	40'		12	
CCI	Crataegus crus-galli var. inermis Thornless Cockspur Hawthorne	1.5" Cal.	B&B	20'	20'		12	

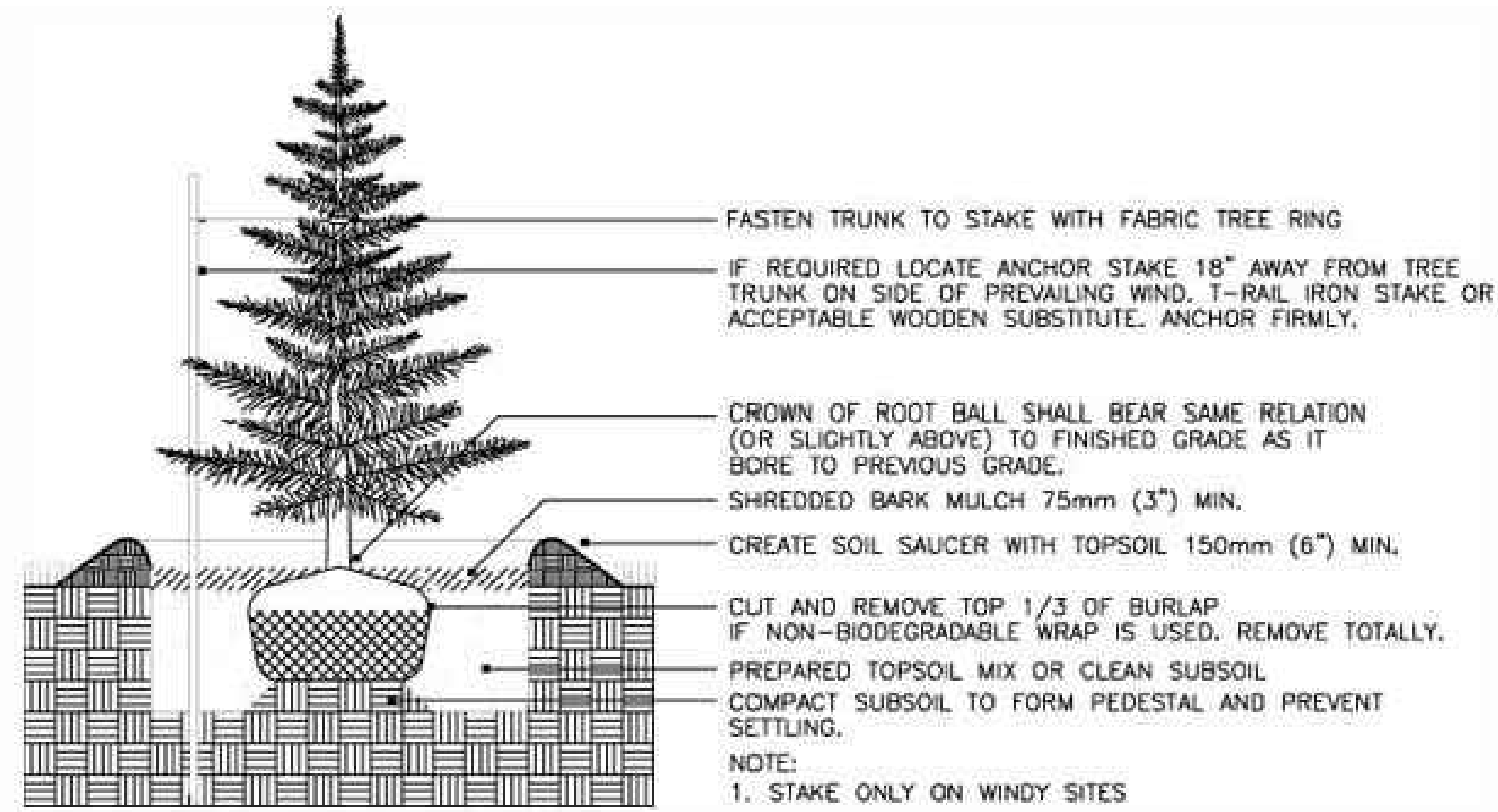
PARKING LOT (WEST)								
Symbol	Botanical Name / Common Name	Size	Condition	Mature Height	Mature Spread	Quantity - Req. by Ordinance	Phase I Quantity	
Trees						29	33	
AR	Acer rubrum 'Red Sunset' Red Sunset Red Maple	1.5" Cal.	B&B	50'	40'		17	
CCI	Crataegus crus-galli var. inermis Thornless Cockspur Hawthorne	1.5" Cal.	B&B	20'	20'		16	

REVISIONS		
SYM	DATE	DESCRIPTION

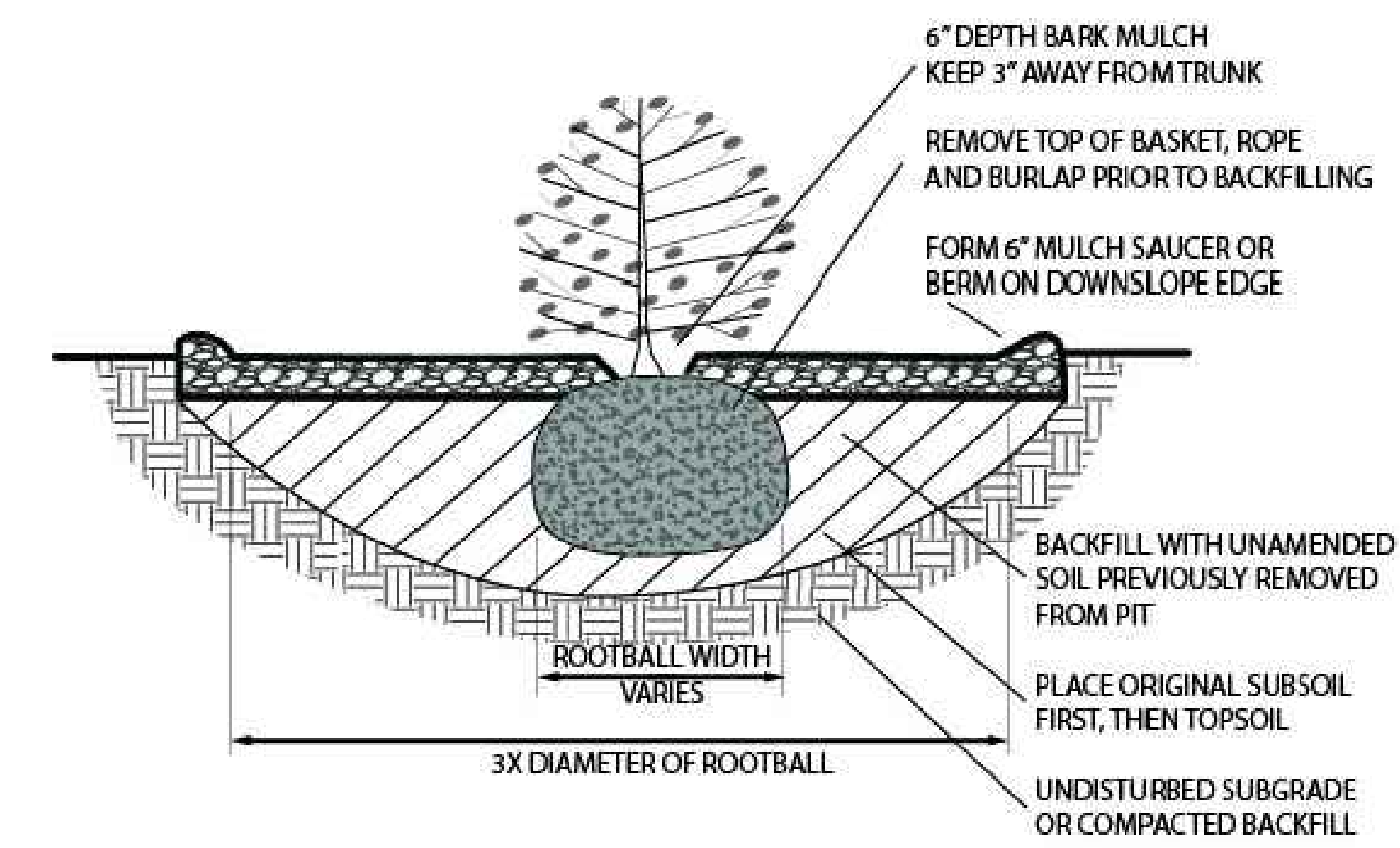
SUBMISSIONS		
DATE	DESCRIPTION	TWP.
06/07/19	SUBMISSION 1	
10/02/19	SUBMISSION 2	

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>

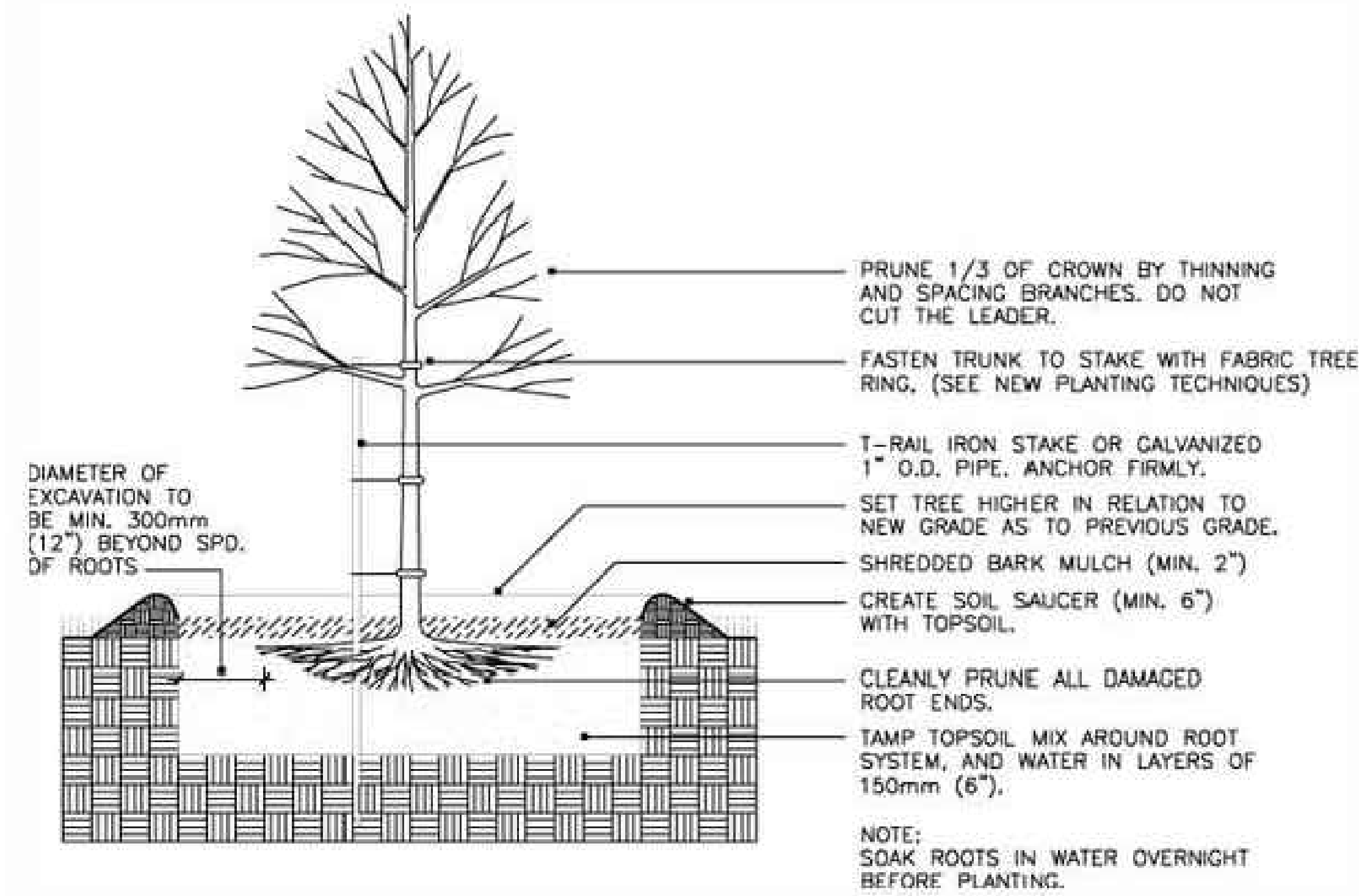


EVERGREEN TREE PLANTING DETAIL
N.T.S.

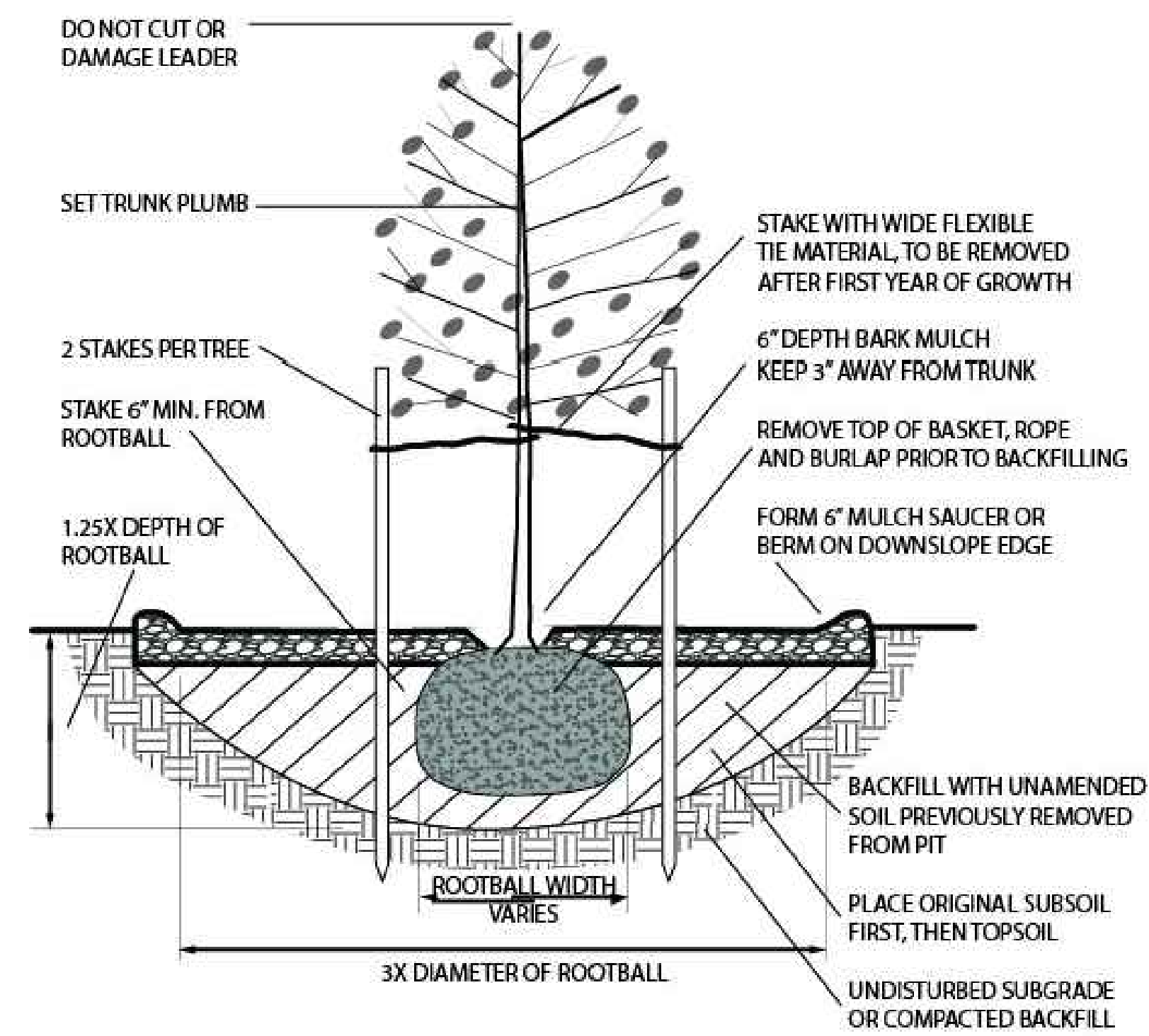


- NOTES:
1. REMOVE AND SEPARATE TOPSOIL AND SUBSOIL FROM PLANTING HOLE FOR USE AS BACKFILL.
 2. REMOVE TOP OF BASKET, ROPE AND BURLAP PRIOR TO BACKFILLING.
 3. IF ROOTBALL IS PACKAGED IN 'PLASTIC BURLAP' OR TREATED BURLAP, REMOVE BURLAP COMPLETELY.
 4. HEAL-IN SOIL AROUND THE ENTIRE ROOTBALL TO ELIMINATE 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.



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



TREE PLANTING ON SLOPE 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 ARCHITECT.

CANOPY TREE PLANTING DETAIL
N.T.S.

REVISIONS

SYM	DATE	DESCRIPTION

SUBMISSIONS

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

WHITEHALL ROAD REGIONAL PARK PHASE 1

<PRELIMINARY NOT FOR CONSTRUCTION>