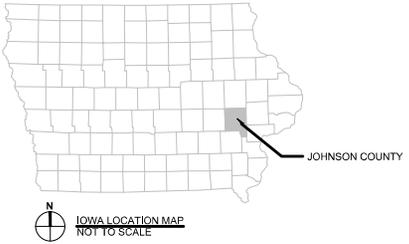


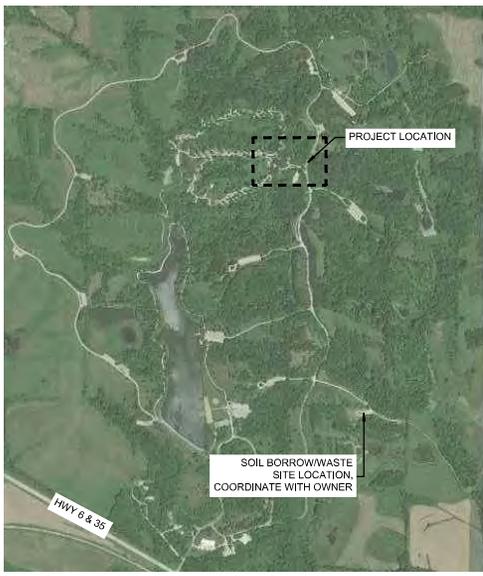
**ATTACHMENT 3
PHASE 1 BID DRAWINGS**

JOHNSON COUNTY



F.W. KENT PARK CAMPGROUND SITE AND UTILITY IMPROVEMENTS

JOHNSON COUNTY CONSERVATION BOARD
2048 HIGHWAY 6 NW OXFORD, IOWA 52322



SHEET INDEX

GENERAL	SITE
A1.00 COVER SHEET	M1.05 SITE UTILITIES- GAS
SITE	M1.06 SITE UTILITIES- DRAIN LINE
A1.01 GENERAL NOTES	M1.01 SEPTIC SYSTEM LEGEND, GENERAL NOTES, AND SPECS
B1.01 TYPICAL SECTIONS	M1.02 SEPTIC SYSTEM INDEX
C1.01 OVERALL SITE PLAN	M1.03 SEPTIC SYSTEM 1, STA 16+00 TO STA 16+00
D1.01 MANLINE PLAN & PROFILE	M1.04 SEPTIC SYSTEM 1, STA 16+00 TO 21+25
D1.02 MANLINE PLAN & PROFILE	M1.05 SEPTIC SYSTEM 1, STA 21+25 TO 27+00
D1.03 MANLINE PLAN & PROFILE	M1.06 SEPTIC SYSTEM 2, STA 30+00 TO 35+00
D1.04 MANLINE PLAN & PROFILE	M1.07 SEPTIC SYSTEM 2, STA 35+00 TO 37+37 AND DETAILS
D1.05 MANLINE PLAN & PROFILE	M1.08 SEPTIC SYSTEM FIELD DETAILS
D1.06 MANLINE PLAN & PROFILE	M1.09 SEPTIC SYSTEM- OVERALL SITE ELECTRICAL
E1.01 STORM WATER POLLUTION PREVENTION PLAN	M1.10 SEPTIC SYSTEM 1, PUMP STATION ELECTRICAL
E1.02 STORM WATER POLLUTION PREVENTION PLAN	R1.01 REMOVALS
F1.01 GRADING	R1.02 OVERALL ELECTRICAL SITE DEMOLITION PLAN
G1.01 SURVEY INFORMATION	R1.03 ENLARGED ELECTRICAL SITE DEMOLITION PLAN
H1.01 PARKING PLAN	T1.00 OVERALL LANDSCAPE PLAN
K1.01 INTERSECTION & PAVEMENT DETAILS	T1.01 LANDSCAPE PLAN AND NOTES
K1.02 INTERSECTION & PAVEMENT DETAILS	U1.01 DETAILS
K1.03 INTERSECTION & PAVEMENT DETAILS	U1.02 DETAILS
K1.04 INTERSECTION & PAVEMENT DETAILS	U1.03 DETAILS
K1.05 INTERSECTION & PAVEMENT DETAILS	U1.04 DETAILS
M1.01 SITE UTILITY- WATER	U1.05 DETAILS
M1.02 SITE ELECTRICAL PLAN	Z1.05 SEPTIC ELECTRICAL PV PLAN
M1.03 SITE ELECTRICAL DETAILS	Z1.06 SEPTIC ELECTRICAL PV DETAILS
M1.04 SITE UTILITIES- STORM SEWER	

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS, AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS, SHALL APPLY TO THE CONSTRUCTION OF THIS PROJECT.

CERTIFICATIONS

CIVIL ENGINEER

I HEREBY CERTIFY THAT THE ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Daniel L. Janson* DATE: 01-18-2024

PRINTED OR TYPED NAME: Daniel Janson

LICENSE NUMBER: 25053

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023.

PAGES, SHEETS OR DRAWINGS COVERED BY THIS SEAL: ALL "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", "L", "M", "N", "O", "P", "Q", "R", "S", "T", "U", "V", "W", "X", "Y", "Z" SHEETS, M1.01, M1.02, M1.03, M1.04, M1.05, M1.06, M1.07, R1.02, R1.03, Z1.05, Z1.06

LANDSCAPE ARCHITECT

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL DOCUMENT DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE, I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Garret L. Munch* DATE: 01-18-2024

PRINTED OR TYPED NAME OR SECURE ELECTRONIC SIGNATURE: Garret L. Munch

LICENSE NUMBER: 25784

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023.

PAGES, SHEETS OR DRAWINGS COVERED BY THIS SEAL: ALL "T" SHEETS

CIVIL ENGINEER

I HEREBY CERTIFY THAT THE ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *James A. Carroll* DATE: 01-18-2024

PRINTED OR TYPED NAME: James A. Carroll

LICENSE NUMBER: 11328

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023.

PAGES, SHEETS OR DRAWINGS COVERED BY THIS SEAL: ALL "M" SHEETS EXCEPT M1.09 AND M1.10

ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THE ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Ian Bromolson* DATE: 01-18-2024

PRINTED OR TYPED NAME: Ian Bromolson

LICENSE NUMBER: 25784

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023.

PAGES, SHEETS OR DRAWINGS COVERED BY THIS SEAL: Z1.05, Z1.06

ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THE ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Matthew K. Gordon* DATE: 01-18-2024

PRINTED OR TYPED NAME: Matthew K. Gordon

LICENSE NUMBER: 19216

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023.

PAGES, SHEETS OR DRAWINGS COVERED BY THIS SEAL: M1.02, M1.03, M1.05, M1.10, R1.02, R1.03



222 Third Avenue SE, Suite 300 | Cedar Rapids, Iowa 52401
319.390.0227 | Fax 319.394.6251 | www.shivehattery.com
Iowa | Illinois | Indiana | Nebraska | Wisconsin

JOHNSON COUNTY CONSERVATION BOARD

PROJECT NO.: 4217341

ISSUE FOR BID

01/26/2024

SHEET NAME: COVER SHEET

SHEET NO.: A1.00

GENERAL NOTES

1. UTILITY NOTE:
 - A. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION OF EXISTENCE OF, AND THE DETERMINATION OF THE EXACT LOCATION OF, UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR(S).
 - B. SOME UTILITIES HAVE BEEN DISCONNECTED BY OWNER AND ABANDONED IN PLACE. REFER TO R-SHEETS FOR UTILITIES TO BE DISCONNECTED AND ABANDONED IN PLACE BY THE CONTRACTOR.
 - C. IF ABANDONED UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, NOTIFY THE OWNER AND ENGINEER PRIOR TO RESUMING CONSTRUCTION.
2. NOTIFY UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN CONSTRUCTION LIMITS OF THE SCHEDULE PRIOR TO EACH STAGE OF CONSTRUCTION.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION.
4. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-6989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.
5. NOTIFY THE APPROPRIATE GOVERNING AUTHORITY 48 - 72 HOURS PRIOR TO BEGINNING CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY. JOHNSON COUNTY CONSERVATION SHALL BE THE PUBLIC AGENCY RESPONSIBLE FOR INSPECTION DURING CONSTRUCTION OF THE PUBLIC PORTIONS OF THE PROJECT.
6. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.
8. A PRE-CONSTRUCTION MEETING SHALL BE HELD FOLLOWING ISSUANCE OF THE NOTICE TO PROCEED BUT PRIOR TO COMMENCING WORK.
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
10. PROVIDE TRAFFIC AND PEDESTRIAN CONTROL MEASURES (SIGNS, BARRICADES, FLAGGERS, ETC.) IN COMPLIANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION.
11. PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
12. MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
13. ADJUST ALL VALVES, MANHOLES, CASTINGS, GAS VENTS, ETC., TO MATCH THE NEW SURFACE. ADJUSTMENT SHALL BE COORDINATED WITH THE UTILITY COMPANIES AND THE COST FOR ALL ADJUSTMENTS SHALL BE INCIDENTAL TO THE CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER. REPAIR ANY DAMAGE TO SAID STRUCTURES AND APPURTENANCES THAT OCCUR DURING CONSTRUCTION.
14. SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES.
15. ALL OPEN EXCAVATIONS SHALL BE PROTECTED.
16. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.
17. CONSTRUCTION ACTIVITIES ARE TO BE LIMITED TO THE EXISTING RIGHT-OF-WAY AND TEMPORARY CONSTRUCTION EASEMENTS. IF ADDITIONAL AREAS ARE NEEDED FOR STAGING, STORAGE, ETC., IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN WRITTEN PERMISSION FROM THE PROPERTY OWNER(S). COPIES OF THE AGREEMENTS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE PRIOR TO THE USE OF PROPERTY.
18. CONTROL DUST SPREADING FROM ALL WORK AND STAGING AREAS.
19. ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SET FORTH AS A SPECIFIC BID ITEM, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.
20. REPAIR OR REPLACE EXISTING FACILITIES (CURBS, PAVEMENT, UTILITIES, ETC.) TO REMAIN, AT NO ADDITIONAL EXPENSE TO THE OWNER.
21. IT IS INTENDED THAT ALL COSTS OF MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS BE PAID FOR UNDER THE ITEMS LISTED ON THE BIDDER'S PROPOSAL. BEFORE SUBMITTING A BID ON THIS PROJECT, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS, SPECIAL PROVISIONS AND THE JOB SITE. IF ANY DISCREPANCIES OR DELETIONS OCCUR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPORT SAME TO SHIVE-HATTERY, INC. IN WRITING AND OBTAIN WRITTEN CLARIFICATION AND/OR INSTRUCTIONS ON HOW TO PROCEED.
22. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY SHIVE-HATTERY, INC. AT THE CONTRACTOR'S EXPENSE. WORK DONE CONTRARY TO THE INSTRUCTIONS OF SHIVE-HATTERY, INC., WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.
23. THE CONTRACTOR SHALL PROTECT ALL TREES SHOWN TO BE SAVED ON THE PLANS. CONTRACTOR SHALL ERECT FENCING AROUND TREE AT THE DRIP LINE, UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PARK OR TRAVEL WITH ANY VEHICLE UNDER THE TREE DRIP LINE.

LEGEND	
EXISTING GENERAL SITE	
PLAN MARK	DESCRIPTION
	EXISTING STRUCTURE
	BOLLARD
	SHRUB
	DECIDUOUS TREE
	CONIFEROUS TREE
	SINGLE POLE SIGN
	DOUBLE POLE SIGN
	TREE LINE
	MINOR CONTOUR
	MAJOR CONTOUR

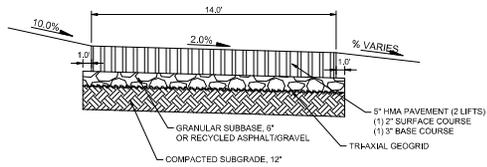
LEGEND	
RIGHT-OF-WAY	
PLAN MARK	DESCRIPTION
	PROPOSED RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	TEMPORARY EASEMENT
	PROPOSED EASEMENT

LEGEND	
GENERAL SITE GRADING / EROSION CONTROL	
PLAN MARK	DESCRIPTION
	SLOPE ARROW
	FLOW ARROW
	SILT FENCE
	INLET PROTECTION
	COMPOST SOOK
	GRADING LIMITS

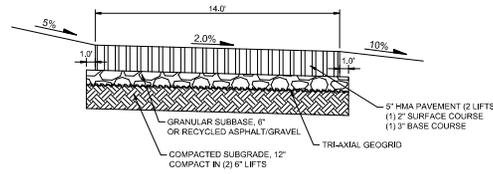
LEGEND		
UTILITY LINES		
EXISTING LINE TYPE	DESCRIPTION	PROPOSED LINE TYPE
	ELECTRIC - OVERHEAD	
	ELECTRIC - UNDERGROUND	
	GAS MAIN	
	WATER MAIN	
	SANITARY SEWER	
	STORM SEWER	
	TELEPHONE - UNDERGROUND	
	FIBER OPTICS	
	HIGH VOLTAGE ELECTRICAL	
	LOW VOLTAGE ELECTRICAL	

LEGEND	
SURVEY	
PLAN MARK	DESCRIPTION
	BENCH MARK
	BOUND
	IRON ROD - FOUND
	IRON ROD - SET
	MONUMENT FOUND
	MONUMENT SET
	X CUT FOUND
	X CUT SET
	RIGHT OF WAY MARKER
	DRILL HOLE
	STATION MARKER
	SOIL BORING
	PROPERTY CORNER
	SURVEY POINT ELEVATION

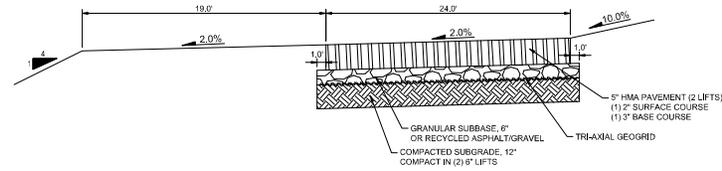
LEGEND	
UTILITIES	
PLAN MARK	DESCRIPTION
	WATER IRRIGATION VALVE
	UTILITY POLE W/TRANSFORMER
	SIREN POLE
	WATER SHUTOFF VALVE
	GUY ANCHOR
	FIRE HYDRANT
	FLARED END SECTION
	VALVE
	STOP BOX
	CABLE TV PEDESTAL
	CLEANOUT
	JUNCTION BOX
	MANHOLE
	STORM MANHOLE
	ELECTRICAL MANHOLE
	SANITARY MANHOLE
	TELEPHONE MANHOLE
	TELEPHONE PEDESTAL
	VAULT BOX
	HANDHOLE
	SIGNAL BOX
	GAS METER
	ELECTRIC METER
	WATER METER
	CURB INLET
	INTAKE - CIRCLE
	INTAKE - RECTANGLE
	INTAKE - SQUARE



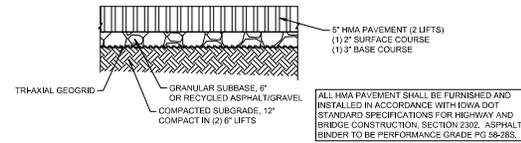
1 TYPICAL ROADWAY SECTION - LOOP ALIGNMENT
NO SCALE



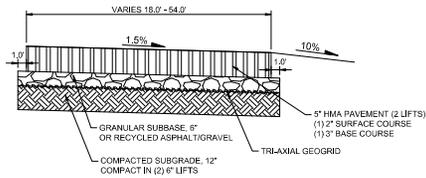
6 TYPICAL ROADWAY SECTION - CAMPING EXIT ALIGNMENT
NO SCALE



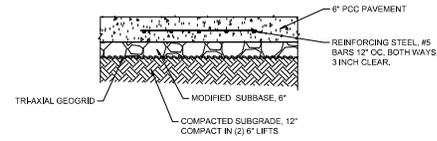
2 TYPICAL ROADWAY SECTION - MAIN ENTRANCE ALIGNMENT
NO SCALE



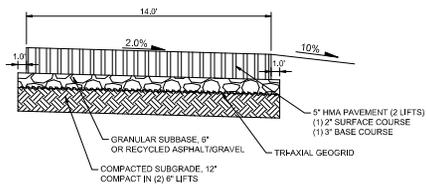
7 TYPICAL ASPHALT SECTION
NO SCALE



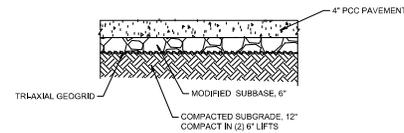
3 TYPICAL ROADWAY SECTION - PARKING ALIGNMENT
NO SCALE



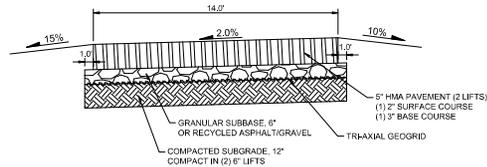
8 PCC HOST PAD SECTION
NO SCALE



4 TYPICAL ROADWAY SECTION - CAMPING ENTRANCE ALIGNMENT
NO SCALE

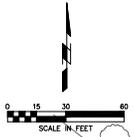
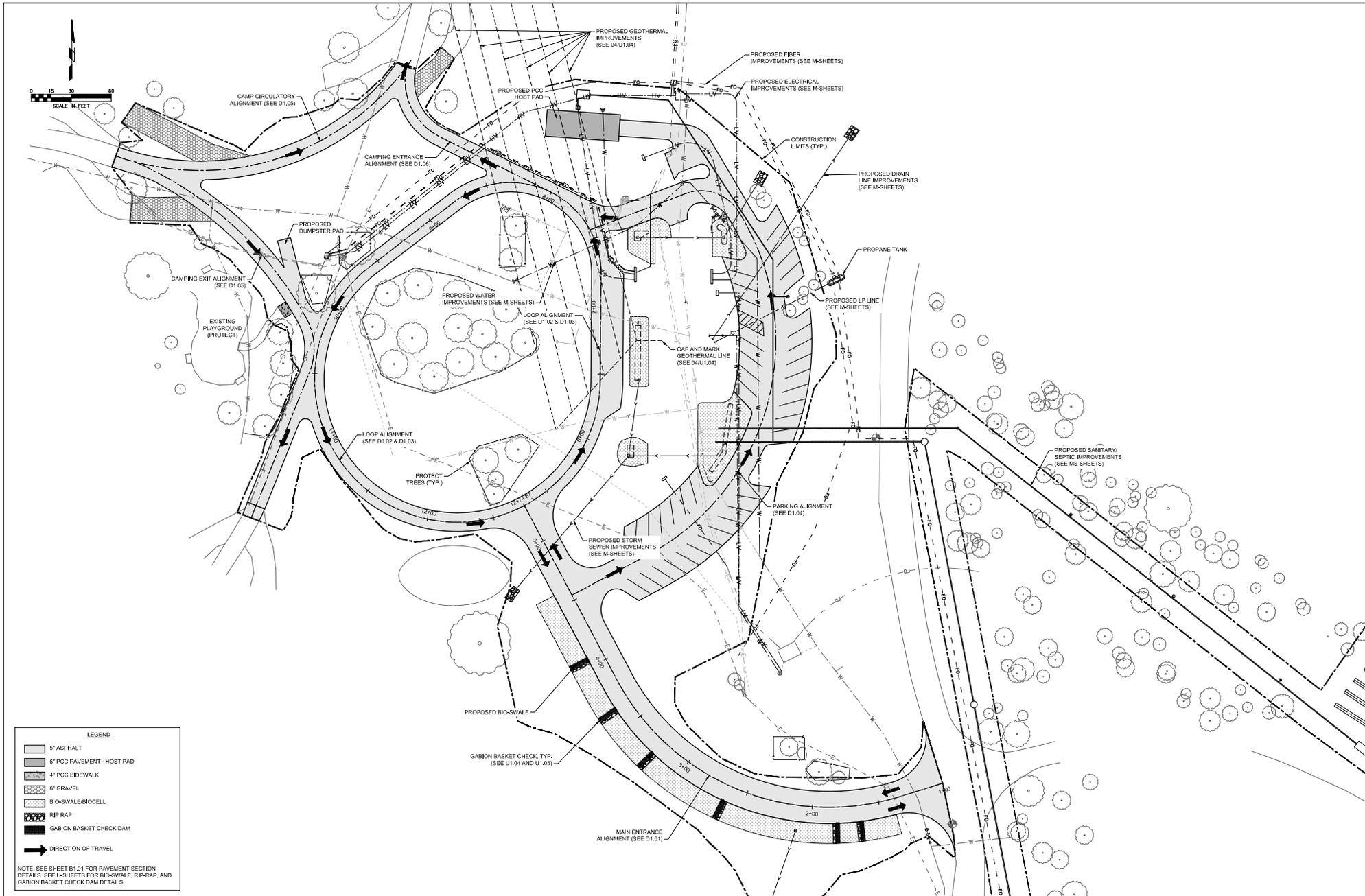


9 PCC SIDEWALK SECTION
NO SCALE



5 TYPICAL ROADWAY SECTION - CAMP CIRCULATORY ALIGNMENT
NO SCALE

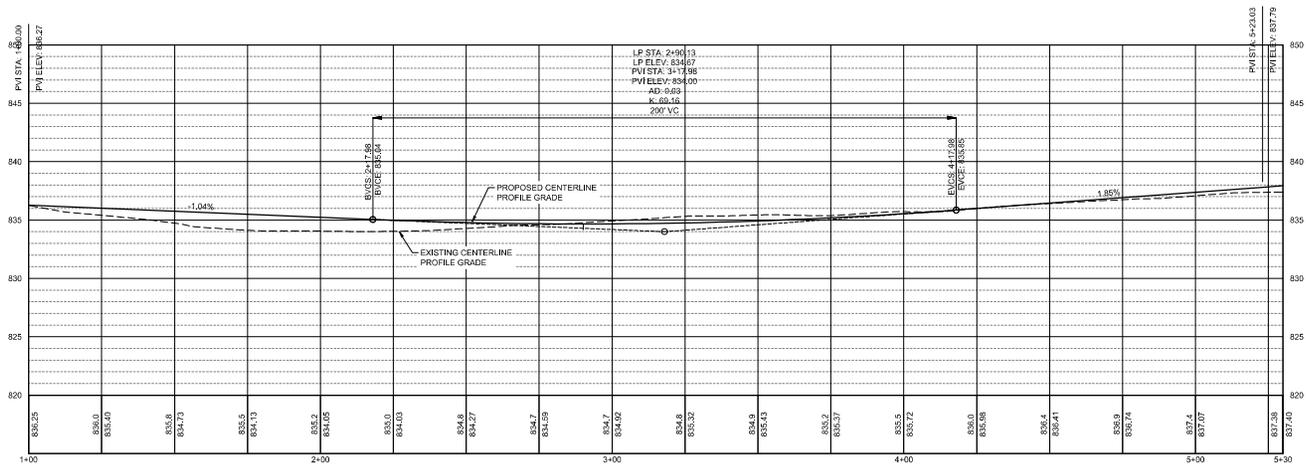
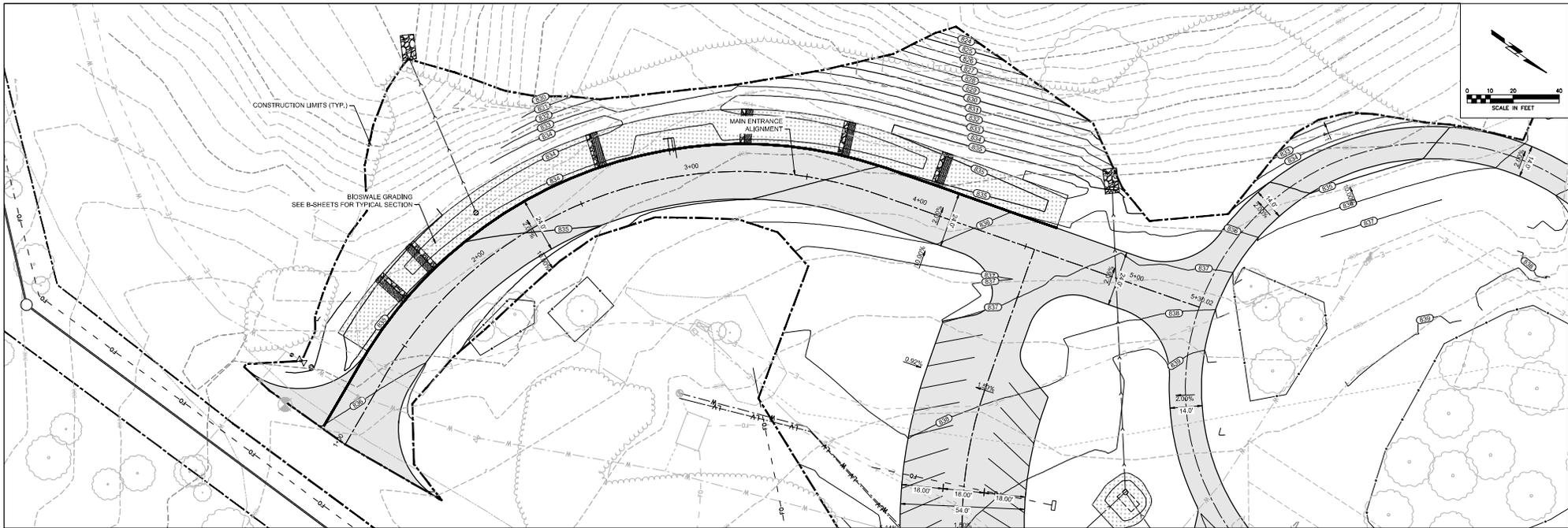
NOTE: CONTRACTOR SHALL REUSE SUITABLE EXISTING SEAL COAT AND GRAVEL REMOVED AND STRIPPED FROM THE SITE (SEE DEMOLITION PLAN) AS GRANULAR SUBBASE FOR THE NEW ASPHALT. IT IS ESTIMATED THAT APPROXIMATELY 4% OF EXISTING MATERIAL STRIPPED WILL BE SALVAGED AND REUSED (APPROXIMATELY 550 CY). ADDITIONAL VIRGIN MATERIAL MAY BE REQUIRED TO SUPPLEMENT RECYCLED MATERIAL. HOWEVER, CONTRACTOR SHOULD FIRST REUSE ALL SALVAGED MATERIAL. THE SALVAGE AND REUSE OF APPROXIMATELY 550 CY OF MATERIAL SHOULD BE INCORPORATED INTO THE GRANULAR SUBBASE BID ITEM.



LEGEND

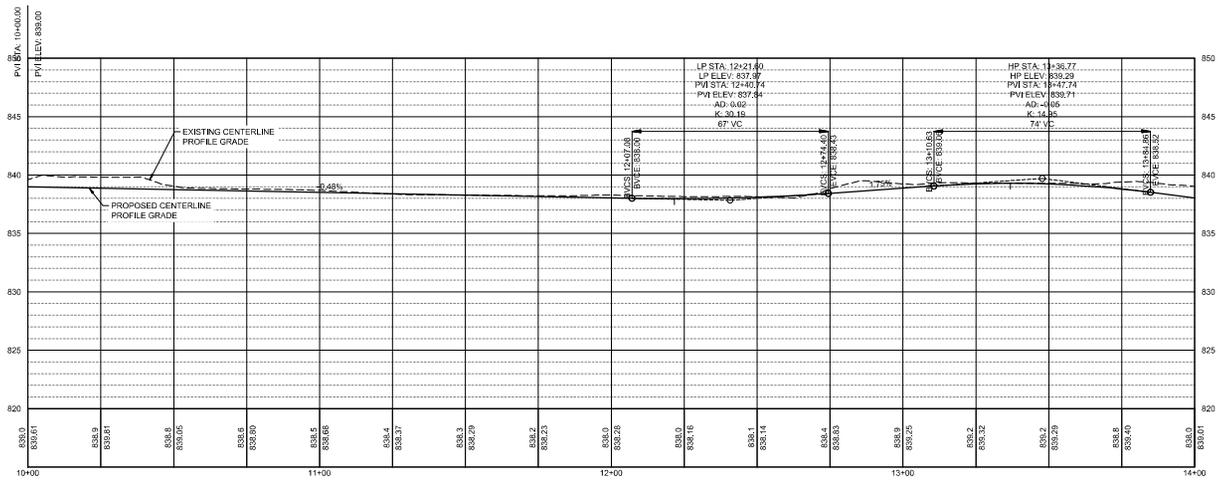
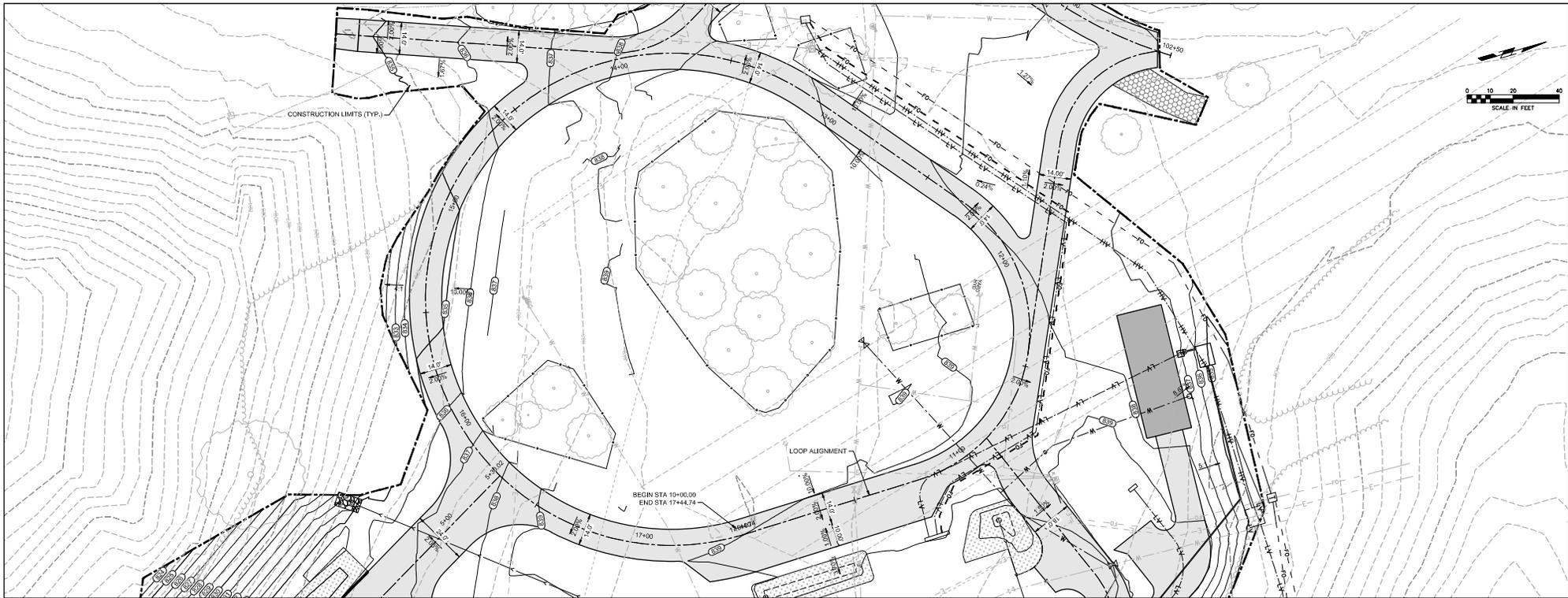
[Pattern: Dotted]	5' ASPHALT
[Pattern: Horizontal lines]	6' PCC PAVEMENT - HOST PAD
[Pattern: Vertical lines]	4' PCC SIDEWALK
[Pattern: Diagonal lines]	6' GRAVEL
[Pattern: Stippled]	BIO-SWALE/BIOCELL
[Pattern: Cross-hatched]	RIP RAP
[Pattern: Solid black]	GABION BASKET CHECK DAM
[Arrow]	DIRECTION OF TRAVEL

NOTE: SEE SHEET B1.01 FOR PAVEMENT SECTION DETAILS. SEE U-SHEETS FOR BIO-SWALE, RIP-RAP, AND GABION BASKET CHECK DAM DETAILS.



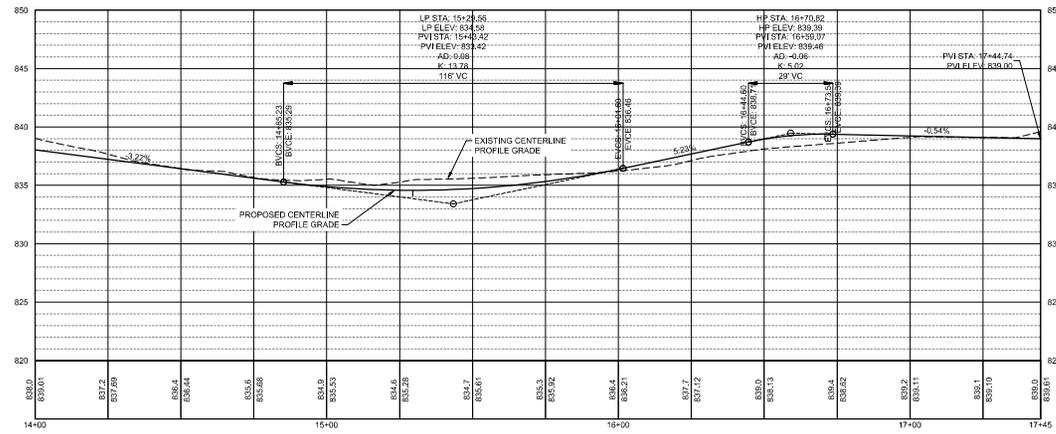
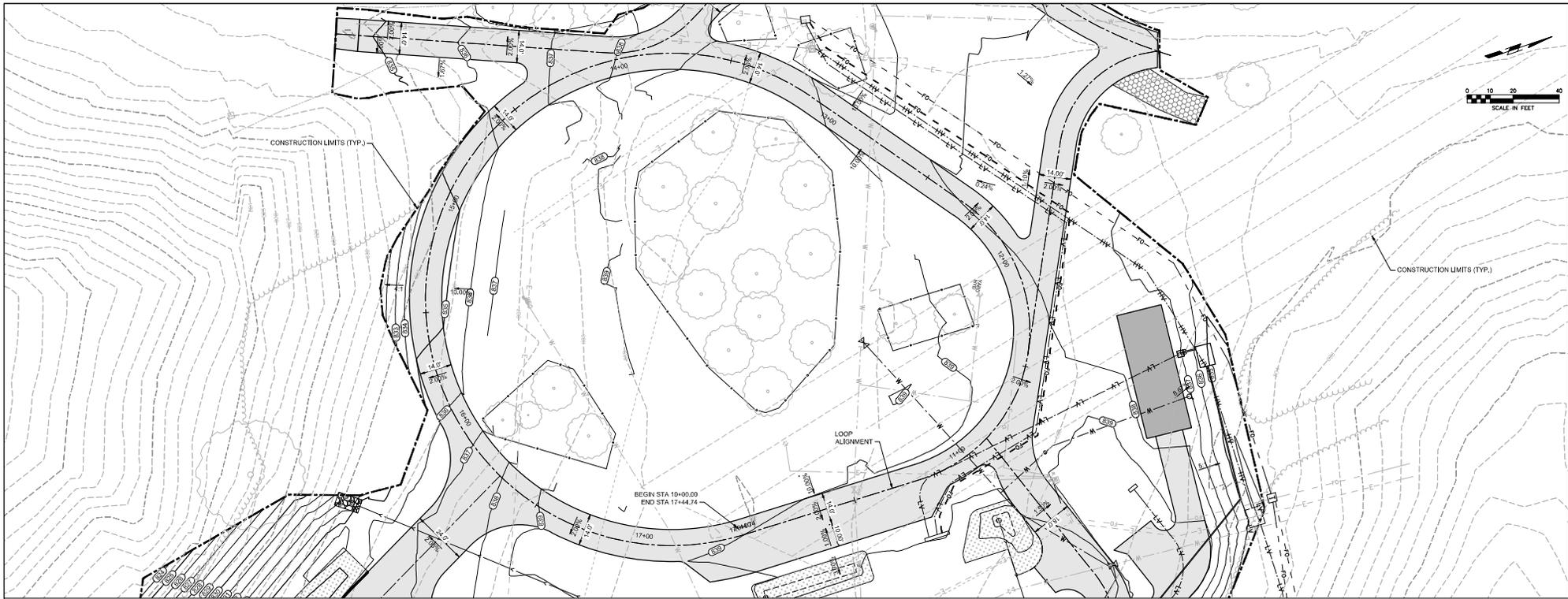
1 Main Entrance Section
 H: 1" = 20' V: 1" = 5'

LEGEND
 5" ASPHALT (SEE SHEET B1.01)



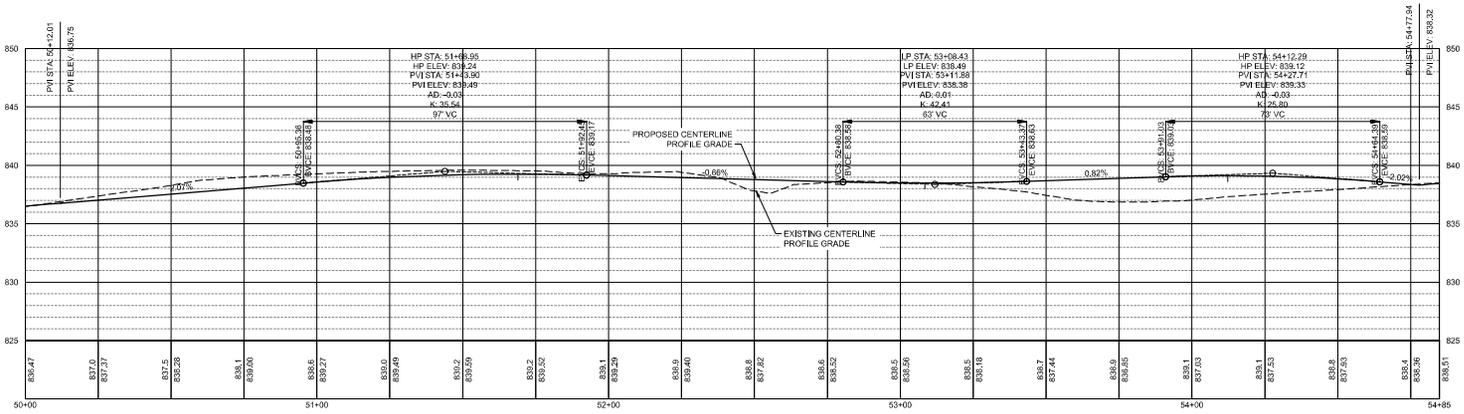
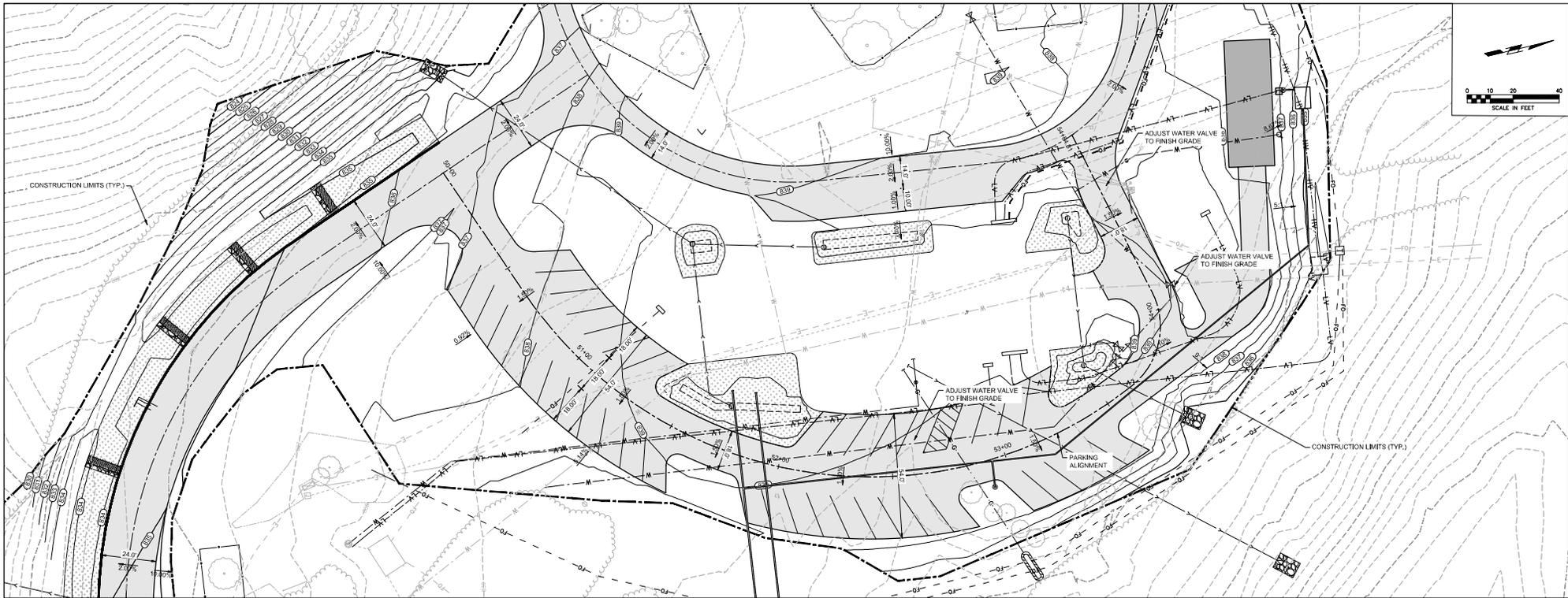
2 Main Loop Section 1
H 1" = 20' V 1" = 5'

LEGEND
 5' ASPHALT (SEE SHEET B1.01)



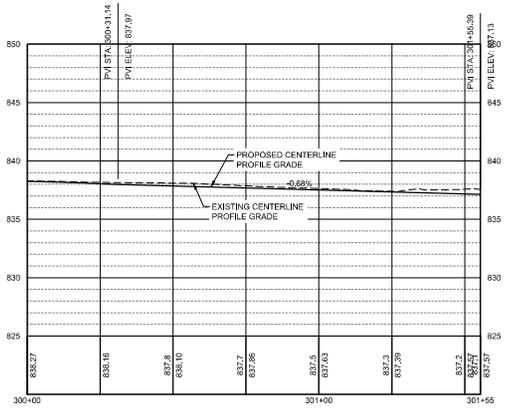
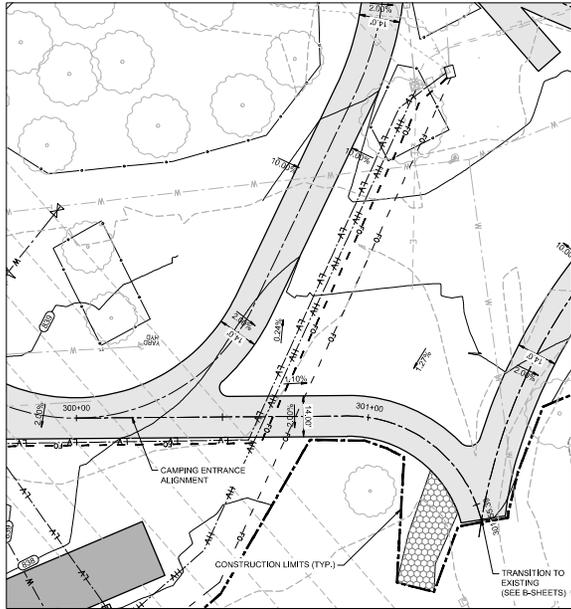
3 Main Loop Section 2
H.P. = 20' V.P. = 5'

LEGEND
 5' ASPHALT (SEE SHEET B1.01)



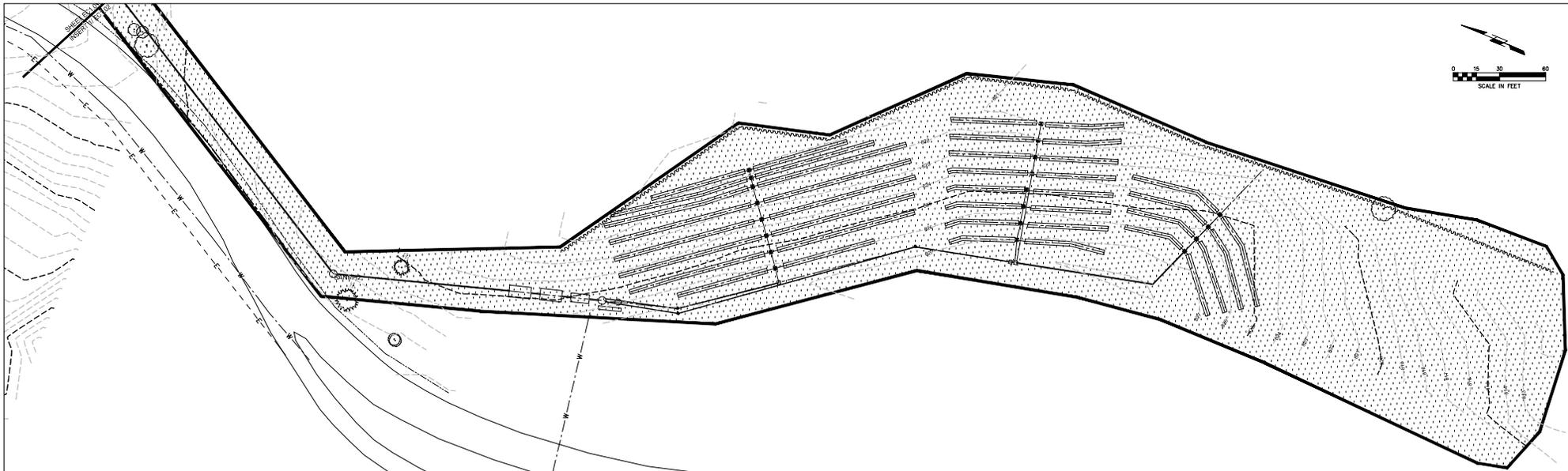
4 Parking Lot Section
H:V = 20' : 1" V: 1" = 5'

LEGEND
5' ASPHALT (SEE SHEET B1.01)



7 Camping Entrance Section
H: V = 20' : 1" V: H = 5'

LEGEND
 5" ASPHALT (SEE SHEET B1.01)

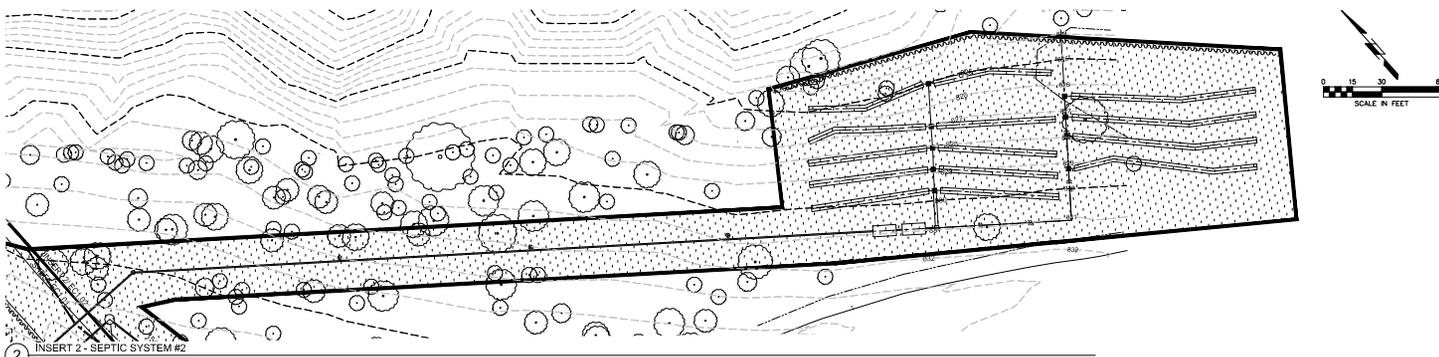


1 INSERT 1 - SEPTIC SYSTEM #1

1" = 30'

LEGEND

- PROJECT SITE/DISTURBED AREA
- INLET PROTECTION
- SILT FENCE SUDAS 9040,119 OR FILTER SOCKS SUDAS 9040,102 SHALL HAVE 17 HOOPS AT MINIMUM 50' INCREMENTS
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (SEE SUDAS 9040,120)
- CONTRACTOR STAGING AREA FOR PORTABLE RESTROOM FACILITIES, TEMPORARY FUEL TANKS, WASTE CONTAINERS AND OTHER HAZARDOUS CHEMICALS, RELOCATE AS REQUIRED FOR CONSTRUCTION.
- TEMPORARY TOPSOIL STOCKPILE
- AMERICAN EXCELSIOR COMPANY CURLEX NETTIES TEMPORARY ROLLED EROSION CONTROL PRODUCT
- CONCRETE, PAINT, AND GROUT WASHOUT AREA PER SUDAS SECT 11.050. CONTRACTOR TO HAUL OFF WASTE MATERIAL. SUGGESTED LOCATION, RELOCATE AS REQUIRED FOR CONSTRUCTION.
- SPILL KIT TO BE INSTALLED AND RELOCATED AS REQUIRED FOR CONSTRUCTION
- PORTABLE RESTROOM FACILITY LOCATION
- SWPPP DOCUMENT LOCATION
- EXISTING GRADE
- DIRECTION OF DRAINAGE

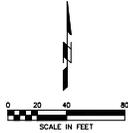


2 INSERT 2 - SEPTIC SYSTEM #2

1" = 30'

STORMWATER POLLUTION PREVENTION NOTES

1. EROSION SEDIMENTATION CONTROL MEASURES SHOULD BE INSTALLED BEFORE EARTH DISTURBING ACTIVITIES BEGIN AND ARE REQUIRED REGARDLESS OF THE TIME OF YEAR. THIS PLAN AND ITS ASSOCIATED REQUIREMENTS FOR THE PERMIT MUST BE IMPLEMENTED DURING WINTER MONTHS AS WELL.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTROL EROSION/SEDIMENTATION ON THE SITE AT ALL TIMES. THE CONTROL MEASURES SHOWN ON THE PLAN ARE A MINIMUM. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION/SEDIMENTATION CONTROL MEASURES AS NECESSARY TO FULFILL THIS REQUIREMENT. CONTRACTOR IS REQUIRED TO MAINTAIN SWPPP DOCUMENTATION.
3. THE CONTRACTOR IS REQUIRED TO USE STABILIZATION CONTROLS FOR AREAS THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE. STABILIZATION MEASURES WILL BE IMPLEMENTED IMMEDIATELY AFTER CONSTRUCTION ACTIVITY HAS CEASED IN THAT AREA. STABILIZATION MEASURES ARE REQUIRED TO PREVENT BOTH SEDIMENTATION AND EROSION. THE CONTRACTOR IS STRONGLY ENCOURAGED TO PROVIDE STABILIZATION CONTROLS FOR ALL DISTURBED AREAS ON SITE REGARDLESS OF THE TIME PERIOD BEFORE THEY WILL BE DISTURBED AGAIN. THE CONTRACTOR SHALL SEED DISTURBED AREAS AS SOON AS WORK IS COMPLETED AS INDICATED ON THE PLANS AND PROJECT MANUAL.
4. THE CONTRACTOR SHALL USE CONTROL MEASURES AS REQUIRED TO KEEP SOILS FROM LEAVING THE SITE.
5. CONTRACTOR SHALL IMPLEMENT SITE SPECIFIC BEST MANAGEMENT PRACTICES (BMPs) AS SHOWN AND REQUIRED BY THE SWPPP/BESS. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED BY THE CONTRACTOR AS DICTATED BY SITE CONDITIONS OR THE PROJECT GOVERNING AUTHORITIES AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
6. IF AFTER REPEATED FAILURE ON THE PART OF THE CONTRACTOR TO PROPERLY CONTROL SOIL EROSION, SEDIMENT AND/OR POLLUTION FROM THE PROJECT SITE, THE GOVERNING AUTHORITIES RESERVE THE RIGHT TO EFFECT NECESSARY CORRECTIVE MEASURES AND CHARGE ANY COSTS TO THE CONTRACTOR.
7. ALL BMPs AND CONTROLS SHALL CONFORM TO THE APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS, STANDARDS, AND SPECIFICATIONS OR MANUAL OF PRACTICE.
8. ALL BMPs AND CONTROLS INSTALLED ON GREEN INFRASTRUCTURE SHALL REMAIN UNTIL STABILIZATION IS APPROVED BY THE OWNER.
9. IN THE EVENT THAT SOILS LEAVE THE SITE, CLEANUP OF ALL SURROUNDING ROADS, DRIVES, AND PARKING LOTS SHALL BE PERFORMED ON A DAILY BASIS AT A MINIMUM AND UPON REQUEST BY OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST. PAVEMENT IS TO BE SCRAPPED OF DEBRIS AND MUD AND BROOMED CLEAN. MUD TRACKS ARE TO BE REMOVED AS THEY ARE CREATED.
10. IF DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIALS ARE DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, OR DITCHES SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, THIS LOOSE MATERIAL SHALL BE REMOVED.
11. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY EXISTING STORM DRAINAGE SYSTEMS BY THE USE OF INLET PROTECTION OR OTHER APPROVED FUNCTIONAL METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.
12. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
13. MAINTAIN SILT FENCING AT ALL TIMES IN AN UPRIGHT POSITION. CLEAN SILT FROM FENCING ON A REGULAR BASIS AS PER THE STANDARD SPECIFICATIONS. SILT FENCES MUST BE CLEANED OUT WHEN THEY ARE 50% FULL.
14. CONTRACTOR TO LOCATE/RELOCATE SILT FENCING/FILTER SOCKS AS NECESSARY THROUGHOUT THE PROJECT TO CONTROL EROSION/SEDIMENTATION. SILT FENCE INSTALLATION IS TO FOLLOW SUDAS 9040,119. FILTER SOCK INSTALLATION IS TO FOLLOW SUDAS 9040,102.
15. REMOVE ALL TEMPORARY EROSION/SEDIMENTATION CONTROLS NOT CALLED OUT TO REMAIN AFTER SITE HAS BEEN STABILIZED AND APPROVED BY THE OWNER'S REPRESENTATIVE. OWNER WILL REMOVE SILT FENCE AFTER SITE HAS STABILIZED.
16. CONTRACTOR TO USE EXTREME CAUTION WHILE INSTALLING SILT FENCE OR OTHER EROSION CONTROL DEVICES SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
17. EROSION CONTROL BLANKETS SHALL BE USED IN AREAS OF 4:1 SLOPE OR STEEPER AND ANY AREAS STABILIZED IN THE FALL FOR OVERWINTERING. OWNER WILL FURNISH AND INSTALL ALL EROSION CONTROL, BLANKET AND SEEDING.
18. SANITARY WASTE DISPOSAL, PORTABLE REST ROOM FACILITIES ARE ANTICIPATED TO BE PLACED ON-SITE. IN THE EVENT THAT PORTABLE REST ROOM FACILITIES ARE USED ON-SITE, THE CONTRACTOR IS REQUIRED TO INSTALL AN EROSION CONTROL DEVICE AROUND THE FACILITY TO MINIMIZE THE RADIUS OF THE AFFECTED ZONE IN THE EVENT OF A SPILL. WASTES SHALL BE COLLECTED AND DISPOSED OF IN COMPLETE COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. PORTABLE RESTROOM FACILITIES MUST NOT BE LOCATED NEAR DRAINAGE WAYS AND SHALL BE STAKED INTO THE GROUND.
19. IDENTIFICATION OF ALLOWABLE NON-STORMWATER DISCHARGES: DURING CONSTRUCTION, WHICH INCLUDES WATER FLUSHED FROM WATER LINES, PAVEMENT AND EQUIPMENT WASHING, AND GROUNDWATER (DEWATERING), SHOULD BE FILTERED WITH APPROPRIATE METHODS AND DIRECTED AWAY FROM DRAINAGE WAYS.
20. POLLUTION AND SPILL PREVENTION PLANNING: POTENTIALLY HAZARDOUS MATERIALS ON THE CONSTRUCTION SITE INCLUDE FUEL, LUBRICANTS, CURING COMPOUNDS, FERTILIZERS, GREASE AND CLEANING SOLVENTS. ALL REASONABLE PRECAUTIONS WILL BE TAKEN TO PREVENT SPILLS. ANY SPILLED MATERIAL WILL IMMEDIATELY BE DIRECTED AWAY FROM STORM WATER INTAKES, DETENTION BASINS, OR DRAINAGE WAYS. SPILLED MATERIALS WILL BE CLEANED AND IF NECESSARY, SOIL REMEDIATION PRACTICES WILL BE USED. A RECORD OF SPILLS WILL BE MAINTAINED BY THE MAIN CONTRACTOR.
21. CONCRETE, PAINT AND GROUT WASHOUT AREA: THE WASHOUT AREA SHOULD BE AN APPROVED CONCRETE WASHOUT CONTAINER, COLLECTION BAG, OR WASHOUT BOX PER SUDAS 11.050, PROTECT WITH AN EROSION CONTROL DEVICE
22. SPILL KIT: A SPILL KIT IS REQUIRED TO BE ON-SITE AND LOCATION NOTED ON THE STORMWATER POLLUTION PREVENTION PLAN. THE SPILL KIT SHOULD BE DESIGNED TO DEAL WITH ANY HAZARDOUS MATERIALS ON-SITE.
23. DUST CONTROL: THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL MEASURES WHERE DUST IS GENERATED. FREQUENT WATERING OF THE SITE, SPRINKLING, VEGETATIVE COVER, MULCH, WINDBREAKS, TILLAGE, STONE AND SPRAY-ON CHEMICAL SOIL TREATMENTS (PALLATIVES) ARE POSSIBLE DUST CONTROL MEASURES. IF THE DUST CONTROL IS NOT ACCEPTABLE IT SHALL BE CHANGED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
24. STOCKPILED MATERIALS: CONTRACTOR TO IDENTIFY ALL LOCATIONS OF STOCKPILED MATERIALS ON THE STORMWATER POLLUTION PREVENTION PLAN. CONTRACTOR SHALL PROVIDE ALL EROSION/SEDIMENTATION CONTROLS AS REQUIRED TO CONTAIN MATERIALS ON-SITE. AT A MINIMUM, THE CONTRACTOR IS REQUIRED TO PROVIDE SILT FENCE/FILTER SOCKS AROUND STOCKPILED SOILS BEFORE STOCKPILE IS RE-SPREAD. IF STOCKPILE SOILS WILL REMAIN INACTIVE FOR 14 DAYS OR MORE, THEY SHALL BE SEEDED OR TAMPED BY THE CONTRACTOR.
25. THE CONTRACTOR SHALL AMEND THE SWPPP WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE OF A STORMWATER BMP.



THE CONTRACTOR IS THE CO-APPLICANT FOR THE NPDES PERMIT AND IS REQUIRED TO DO ALL REQUIRED RECORD KEEPING. ALL RECORDS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AS THEY ARE PRODUCED.

SITE INFORMATION
TOTAL DISTURBED AREA: 8.69 AC

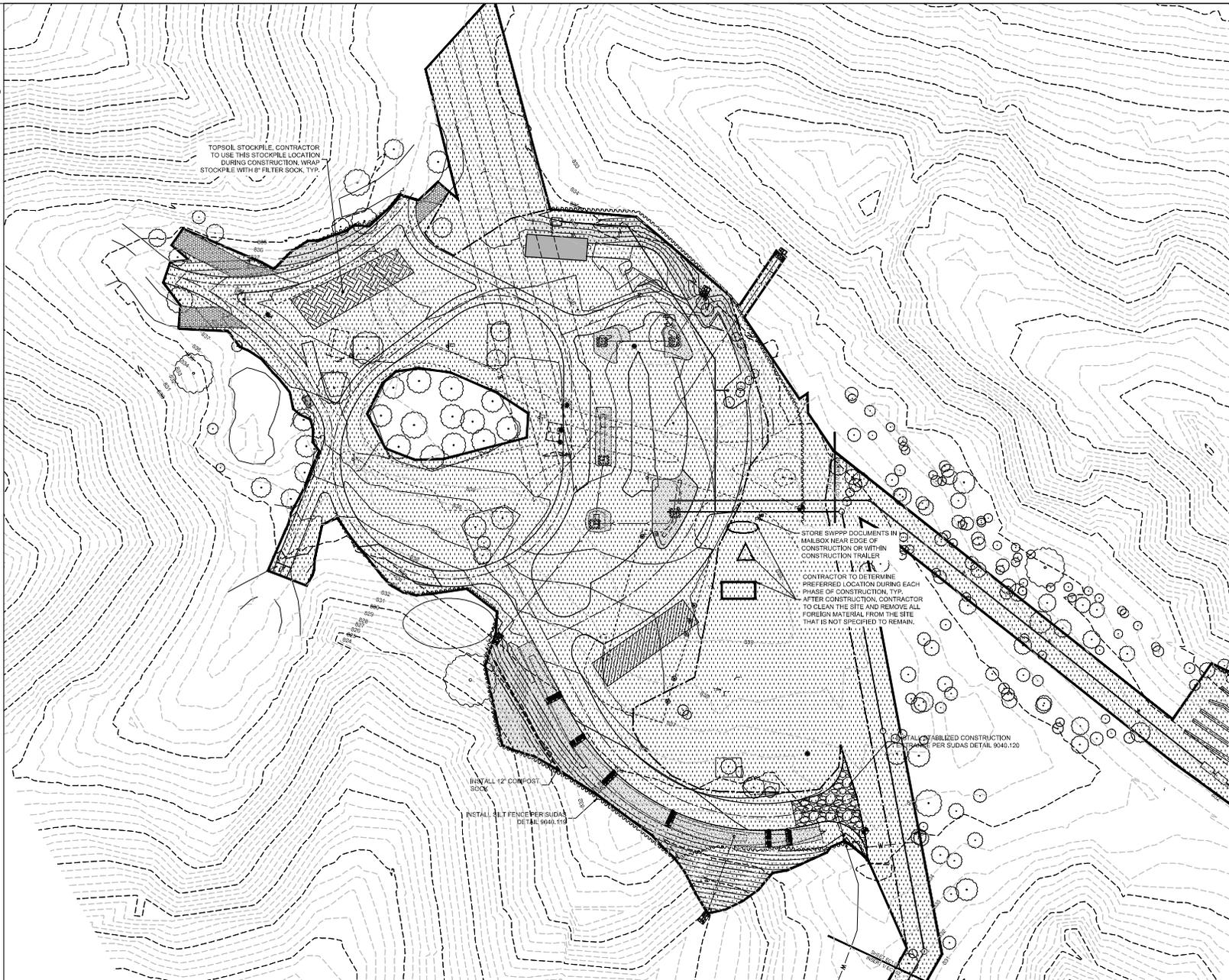
THE SEDIMENT CONTROLS IDENTIFIED ON THIS DRAWING MUST BE INSTALLED PRIOR TO SOIL-DISTURBING ACTIVITIES AND ARE TO REMAIN THROUGHOUT CONSTRUCTION. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, PERIMETER CONTROLS, STABILIZED CONSTRUCTION ENTRANCES, INTAKE PROTECTION, AREAS OF CONCENTRATED FLOW AND STOCKPILE PROTECTION.

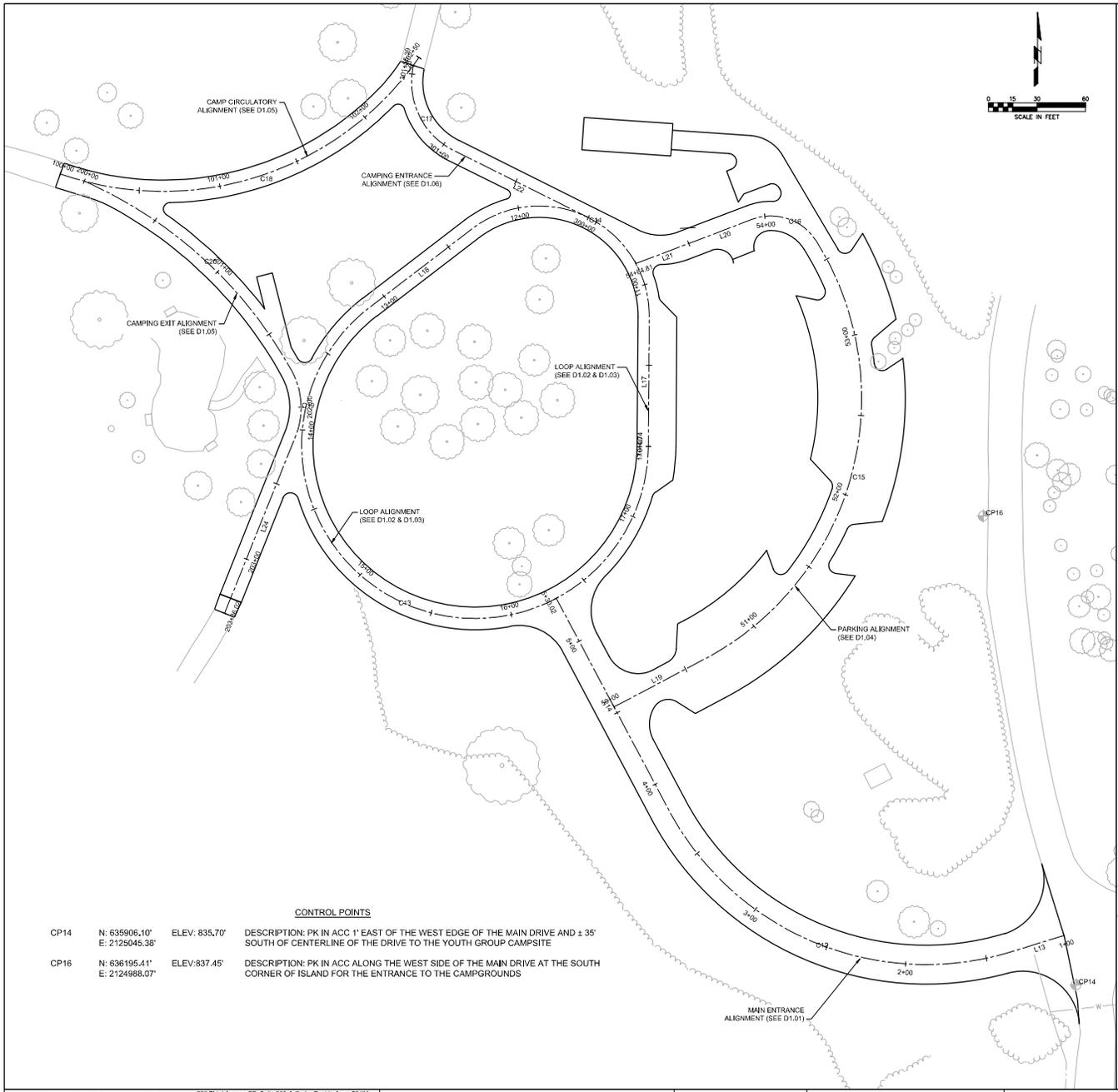
SEED TYPE	PLANTING DATES
PERMANENT SEEDING	MARCH 1 - MAY 31
TEMPORARY SEEDING	AUGUST 10 - SEPTEMBER 30
TEMPORARY SEEDING	JUNE 1 - AUGUST 9

NOTE:
1) ALL DISTURBED AREAS SHALL RECEIVE HYDROSEEDING
2) ALL SLOPES THAT EXCEED 20% SHALL SOOTING

LEGEND

-  PROJECT SITE-DISTURBED AREA
-  INLET PROTECTION
-  SILT FENCE SUDAS 9040.119 OR FILTER SOCKS SUDAS 9040.102 SHALL HAVE 2' HOOKS AT MINIMUM 50' INCREMENTS
-  STABILIZED CONSTRUCTION ENTRANCE/EXIT SEE SUDAS 9040.120
-  CONTRACTOR STAGING AREA FOR PORTABLE RESTROOM FACILITIES, TEMPORARY FUEL TANKS, WASTE CONTAINERS AND OTHER HAZARDOUS CHEMICALS. RELOCATE AS REQUIRED FOR CONSTRUCTION.
-  TEMPORARY TOPSOIL STOCKPILE
-  TYPE 2 ROLLED EROSION CONTROL PRODUCT, 100% BIODEGRADABLE AREA = 1.955 SY
-  CONCRETE, PAINT, AND GROUT WASHOUT AREA PER SUDAS SECT 11.050. CONTRACTOR TO HALL OFF WASTE MATERIAL. SUGGESTED LOCATION. RELOCATE AS REQUIRED FOR CONSTRUCTION.
-  SPILL KIT TO BE INSTALLED AND RELOCATED AS REQUIRED FOR CONSTRUCTION
-  PORTABLE RESTROOM FACILITY LOCATION
-  SWPPP DOCUMENT LOCATION
-  EXISTING GRADE
-  DIRECTION OF DRAINAGE





MAIN ENTRANCE ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
L13	33.00'		S72° 45' 37.89"W		N = 635936.63 E = 2128037.63	N = 635926.76 E = 2125006.13
C12	249.03'	180.00'	N67° 36' 15.81"W	79° 16' 12.60"	N = 635926.76 E = 2125006.13	N = 636014.25 E = 2124793.81
L14	147.69'		N27° 58' 09.50"W		N = 636014.25 E = 2124793.81	N = 636144.89 E = 2124724.54

LOOP ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
L17	78.74'		N00° 26' 20.18"E		N = 636238.37 E = 2124781.36	N = 636318.11 E = 2124781.97
C14	151.76'	68.00'	N63° 29' 52.53"W	127° 52' 25.42"	N = 636318.11 E = 2124781.97	N = 636372.63 E = 2124672.64
L18	78.74'		S52° 33' 54.79"W		N = 636372.63 E = 2124672.64	N = 636324.16 E = 2124609.32
C13	433.50'	107.00'	S63° 29' 52.53"E	232° 07' 34.58"	N = 636324.16 E = 2124609.32	N = 636238.37 E = 2124781.36

PARKING ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
L19	63.00'		N62° 10' 35.52"E		N = 636077.59 E = 2124760.16	N = 636107.02 E = 2124615.93
C15	299.94'	182.00'	N14° 57' 53.39"E	94° 25' 24.26"	N = 636107.02 E = 2124815.93	N = 636365.09 E = 2124884.91
C16	45.23'	33.00'	N71° 30' 50.59"W	78° 32' 03.62"	N = 636365.09 E = 2124884.91	N = 636378.34 E = 2124846.29
L20	37.53'		S69° 13' 07.65"W		N = 636378.34 E = 2124846.29	N = 636365.02 E = 2124810.21
L21	38.00'		S69° 13' 07.65"W		N = 636365.02 E = 2124810.21	N = 636351.16 E = 2124773.69

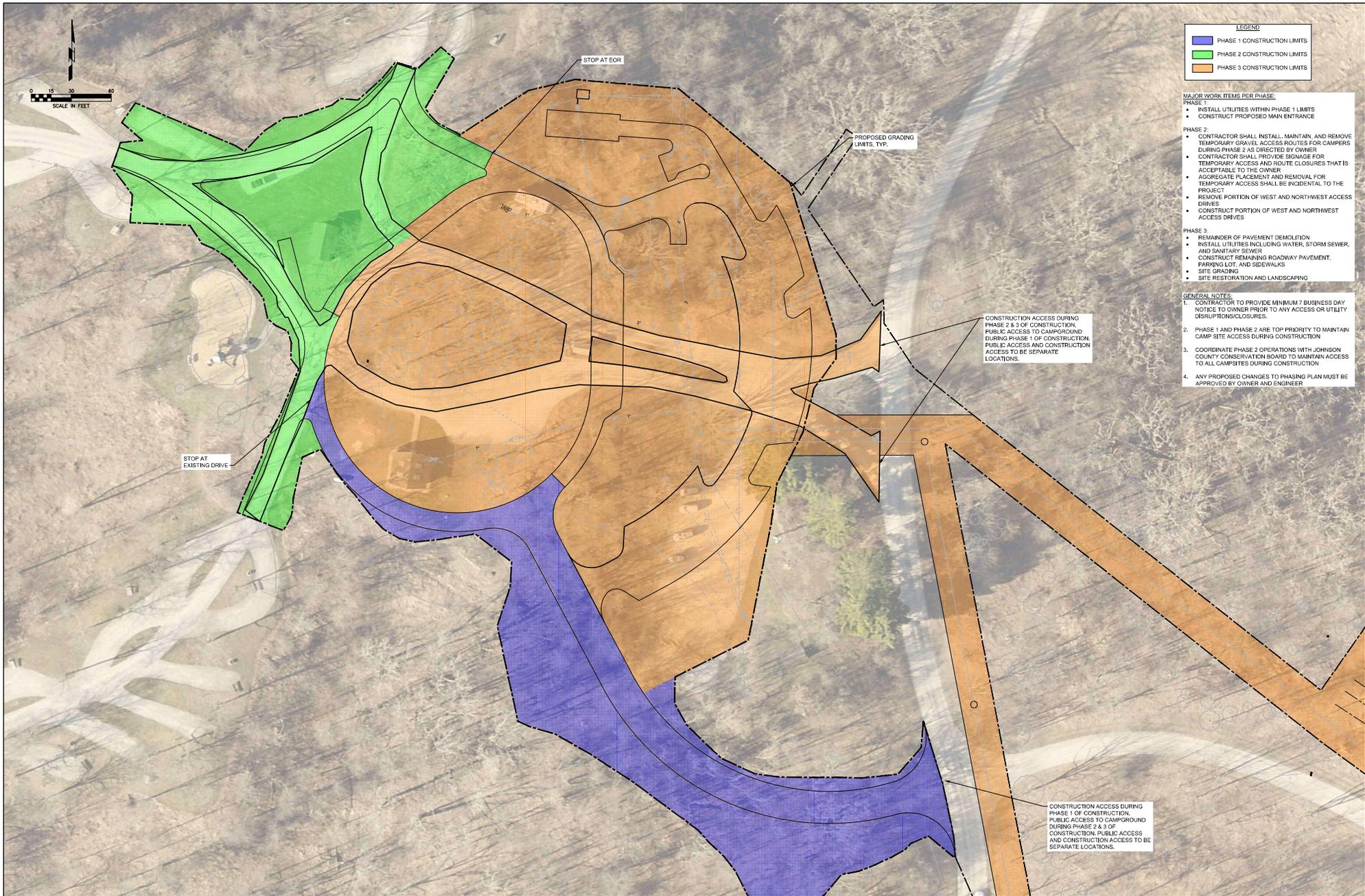
CAMP CIRCULATORY ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
C18	250.00'	192.00'	N72° 01' 37.64"E	74° 36' 13.87"	N = 636406.47 E = 2124416.37	N = 636478.28 E = 2124839.73

CAMPING ENTRANCE ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
L22	92.81'		N63° 30' 31.88"W		N = 636379.50 E = 2124744.29	N = 636420.90 E = 2124661.22
C17	60.85'	47.00'	N26° 25' 11.79"W	74° 10' 40.13"	N = 636420.90 E = 2124661.22	N = 636471.66 E = 2124636.00
L23	1.73'		N10° 40' 08.28"E		N = 636471.66 E = 2124636.00	N = 636473.36 E = 2124636.52

CAMPING EXIT ALIGNMENT						
SEGMENT #	LENGTH	RADIUS	LINE/CHORD DIRECTION	DELTA (Δ)	START POINT	END POINT
C20	176.44'	271.00'	S47° 35' 53.26"E	37° 18' 08.90"	N = 636401.95 E = 2124531.13	N = 636285.06 E = 2124561.13
C19	41.64'	47.00'	S03° 33' 58.34"E	50° 45' 38.93"	N = 636285.06 E = 2124561.13	N = 636244.85 E = 2124563.63
L24	117.94'		S21° 48' 51.63"W		N = 636244.85 E = 2124563.63	N = 636135.36 E = 2124519.80

CONTROL POINTS

- CP14 N: 635906.10' ELEV: 835.70' DESCRIPTION: PK IN ACC 1' EAST OF THE WEST EDGE OF THE MAIN DRIVE AND ± 35' SOUTH OF CENTERLINE OF THE DRIVE TO THE YOUTH GROUP CAMPSITE
- CP16 N: 636195.41' ELEV: 837.45' DESCRIPTION: PK IN ACC ALONG THE WEST SIDE OF THE MAIN DRIVE AT THE SOUTH CORNER OF ISLAND FOR THE ENTRANCE TO THE CAMPGROUNDS



LEGEND

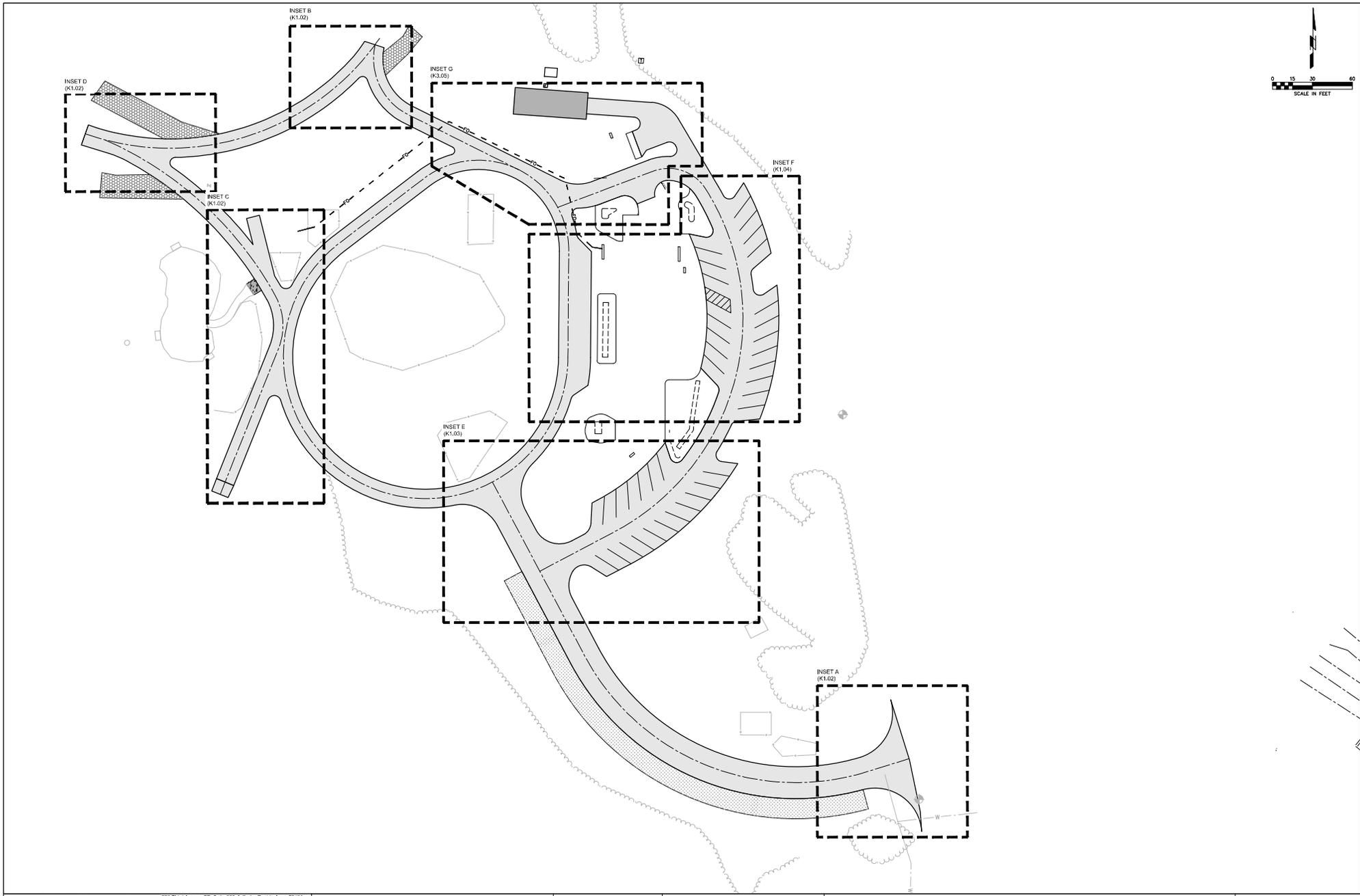
- PHASE 1 CONSTRUCTION LIMITS
- PHASE 2 CONSTRUCTION LIMITS
- PHASE 3 CONSTRUCTION LIMITS

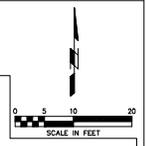
- MAJOR WORK ITEMS PER PHASE:**
- PHASE 1**
- INSTALL UTILITIES WITHIN PHASE 1 LIMITS
 - CONSTRUCT PROPOSED MAIN ENTRANCE
- PHASE 2**
- CONTRACTOR SHALL INSTALL, MAINTAIN, AND REMOVE TEMPORARY GRAVEL ACCESS ROUTES FOR CAMPERS DURING PHASE 2 AS DIRECTED BY OWNER
 - CONTRACTOR SHALL PROVIDE SIGNAGE FOR TEMPORARY ACCESS AND ROUTE CLOSURES THAT IS ACCEPTABLE TO THE OWNER
 - AGGREGATE PLACEMENT AND REMOVAL FOR TEMPORARY ACCESS SHALL BE INCIDENTAL TO THE PROJECT
 - REMOVE PORTION OF WEST AND NORTHWEST ACCESS DRIVES
 - CONSTRUCT PORTION OF WEST AND NORTHWEST ACCESS DRIVES
- PHASE 3**
- REMAINDER OF PAVEMENT DEMOLITION
 - INSTALL UTILITIES INCLUDING WATER, STORM SEWER, AND SANITARY SEWER
 - CONSTRUCT REMAINING ROADWAY PAVEMENT, PARKING LOT, AND SIDEWALKS
 - SITE GRADING
 - SITE RESTORATION AND LANDSCAPING

- GENERAL NOTES:**
1. CONTRACTOR TO PROVIDE MINIMUM 7 BUSINESS DAY NOTICE TO OWNER PRIOR TO ANY ACCESS OR UTILITY DISRUPTIONS/CLOSURES.
 2. PHASE 1 AND PHASE 2 ARE TOP PRIORITY TO MAINTAIN CAMP SITE ACCESS DURING CONSTRUCTION
 3. COORDINATE PHASE 2 OPERATIONS WITH JOHNSON COUNTY CONSERVATION BOARD TO MAINTAIN ACCESS TO ALL CAMPSITES DURING CONSTRUCTION
 4. ANY PROPOSED CHANGES TO PHASING PLAN MUST BE APPROVED BY OWNER AND ENGINEER

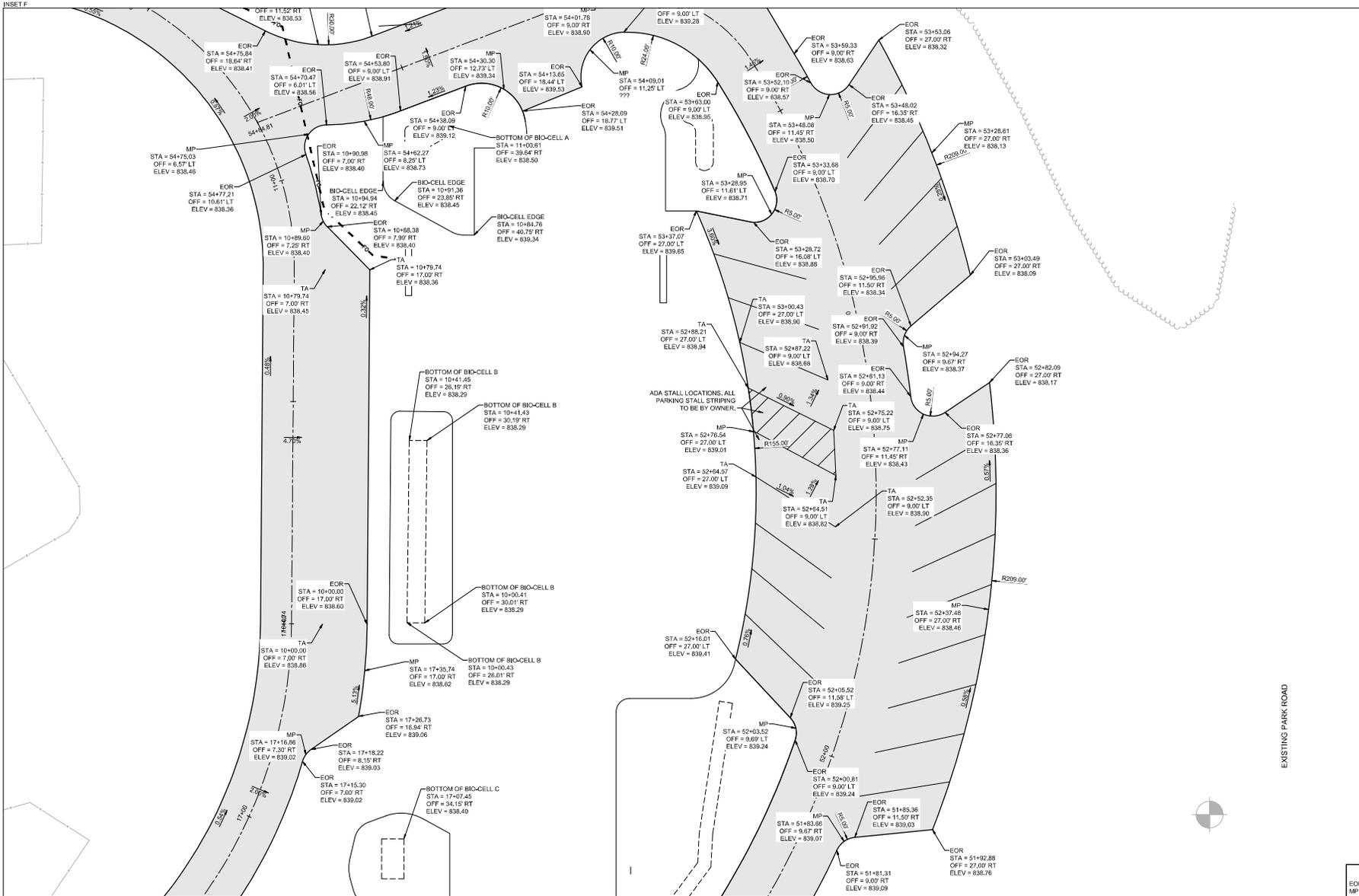
CONSTRUCTION ACCESS DURING PHASE 2 & 3 OF CONSTRUCTION. PUBLIC ACCESS TO CAMPGROUND DURING PHASE 1 OF CONSTRUCTION. PUBLIC ACCESS AND CONSTRUCTION ACCESS TO BE SEPARATE LOCATIONS.

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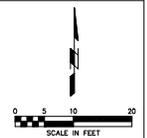




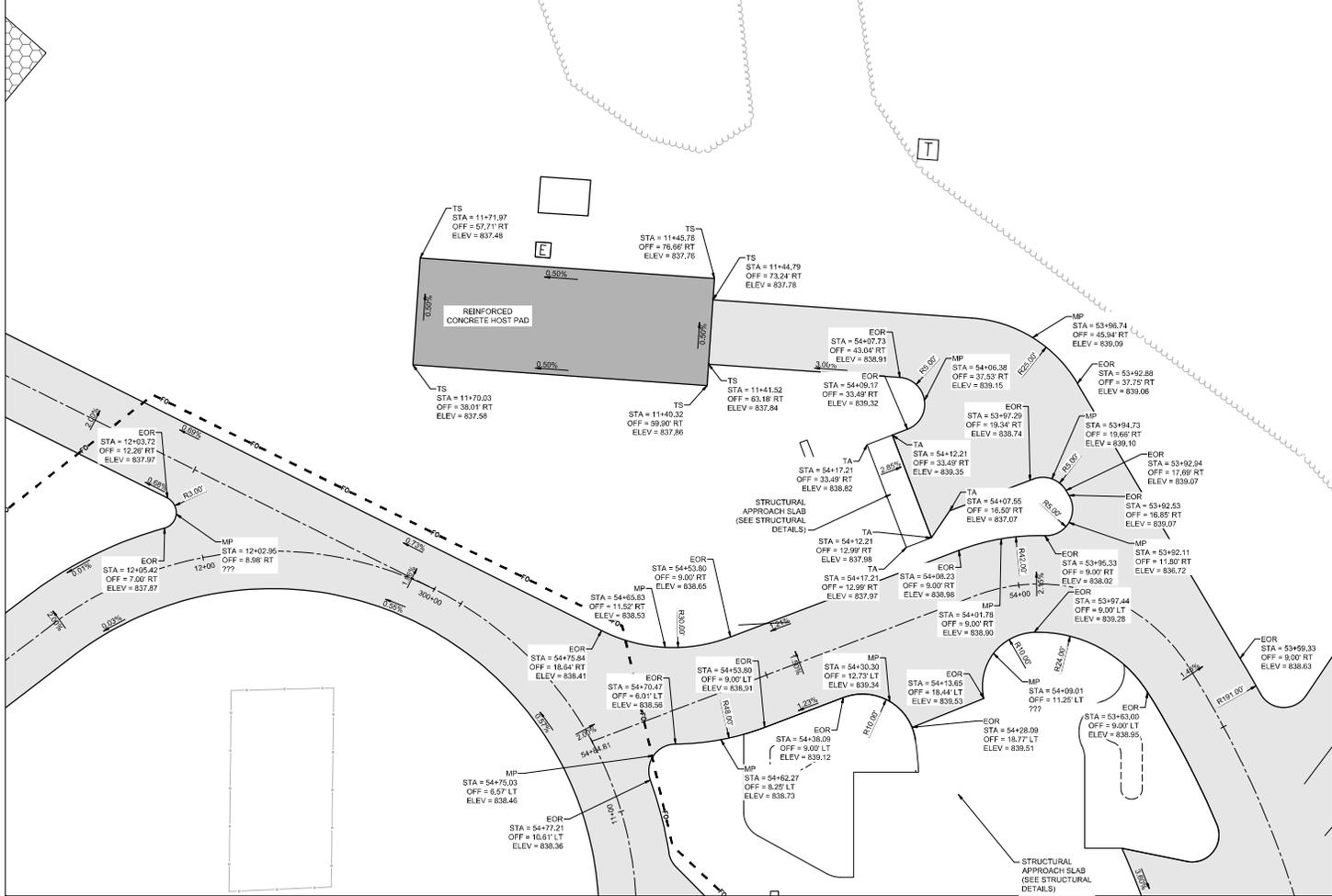
INSET F



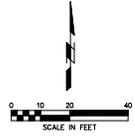
LEGEND	
EOR	= END OF RADIUS
MP	= MIDPOINT
TA	= TOP OF ACC
TS	= TOP OF SLAB
MATCH EX	= MATCH EXISTING ELEVATION



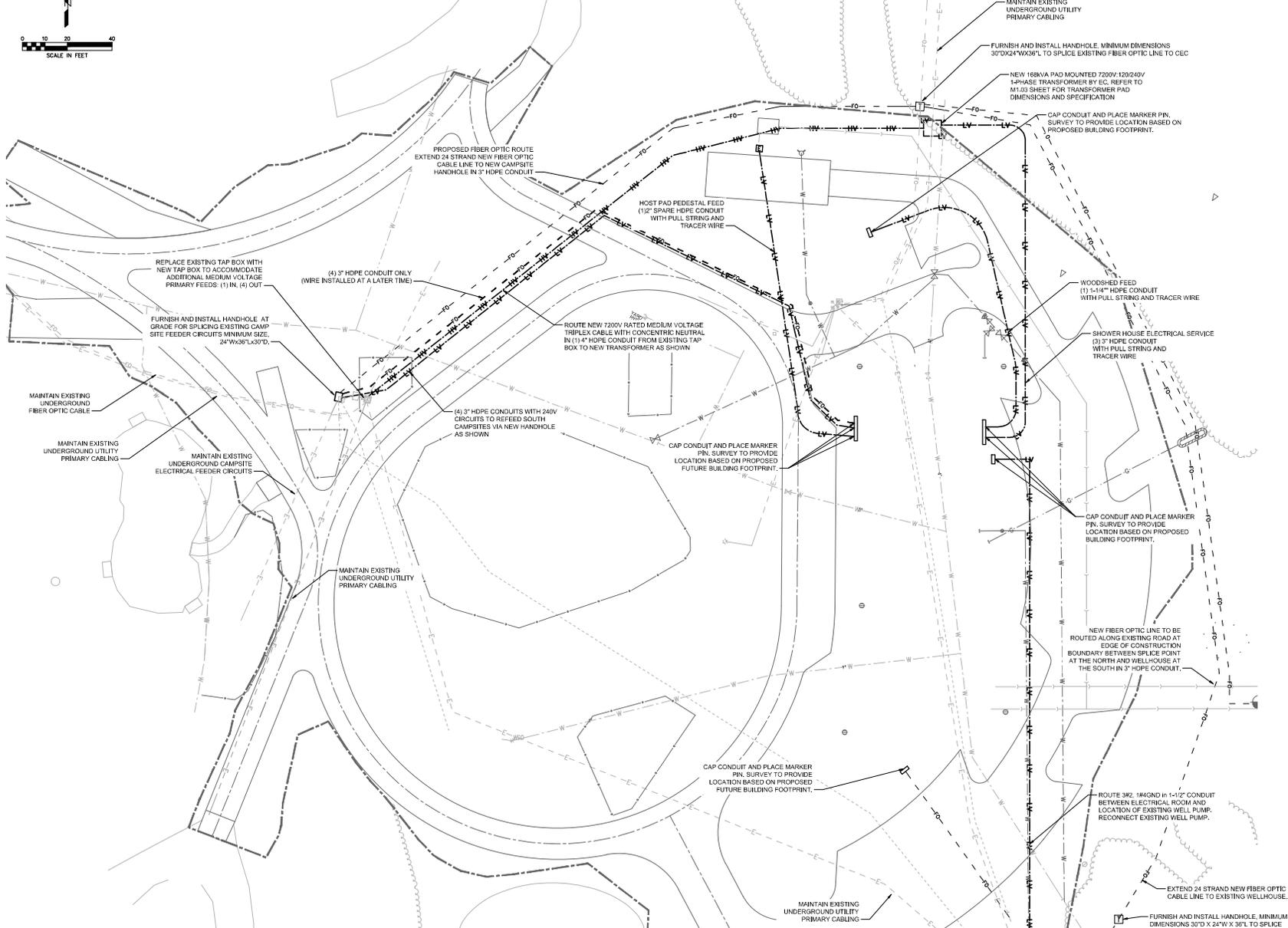
INSET G



LEGEND	
EOR	= END OF RADIUS
MP	= MIDPOINT
TA	= TOP OF ACC
TS	= TOP OF SLAB
MATCH EX	= MATCH EXISTING ELEVATION



GENERAL NOTES:
 ALL MEDIUM VOLTAGE CABLING IN THE PARK IS OWNED BY JOHNSON COUNTY CONSERVATION. ANY BURIED MEDIUM VOLTAGE CABLE MUST BE HANDLED BY A LICENSED CONTRACTOR CERTIFIED TO WORK AT DISTRIBUTION VOLTAGE. THIS INCLUDES UNDERGROUND SPlicing, ABOVE GRADE TAP BOXES, SETTING OF TRANSFORMERS AND OTHER WORK NECESSARY TO COMPLETE THIS PROJECT.



REPLACE EXISTING TAP BOX WITH NEW TAP BOX TO ACCOMMODATE ADDITIONAL MEDIUM VOLTAGE PRIMARY FEEDS: (1) IN, (4) OUT

(4) 3" HOPE CONDUIT ONLY (WIRE INSTALLED AT A LATER TIME)

FURNISH AND INSTALL HANDHOLE AT GRADE FOR SPlicing EXISTING CAMP SITE FEEDER CIRCUITS MINIMUM SIZE: 36"X24"X36"

PROPOSED FIBER OPTIC ROUTE EXTEND 24 STRAND NEW FIBER OPTIC CABLE LINE TO NEW CAMPSITE HANDHOLE IN 3" HOPE CONDUIT

ROUTE NEW 7200V RATED MEDIUM VOLTAGE TRIPLEX CABLE WITH CONCENTRIC NEUTRAL IN (1) 4" HOPE CONDUIT FROM EXISTING TAP BOX TO NEW TRANSFORMER AS SHOWN

(4) 3" HOPE CONDUITS WITH 240V CIRCUITS TO REFEED SOUTH CAMPSITES VIA NEW HANDHOLE AS SHOWN

CAP CONDUIT AND PLACE MARKER PIN. SURVEY TO PROVIDE LOCATION BASED ON PROPOSED FUTURE BUILDING FOOTPRINT.

CAP CONDUIT AND PLACE MARKER PIN. SURVEY TO PROVIDE LOCATION BASED ON PROPOSED BUILDING FOOTPRINT.

WOODSHED FEED (1) 1-1/4" HOPE CONDUIT WITH PULL STRING AND TRACER WIRE

SHOWER HOUSE ELECTRICAL SERVICE (3) 3" HOPE CONDUIT WITH PULL STRING AND TRACER WIRE

CAP CONDUIT AND PLACE MARKER PIN. SURVEY TO PROVIDE LOCATION BASED ON PROPOSED BUILDING FOOTPRINT.

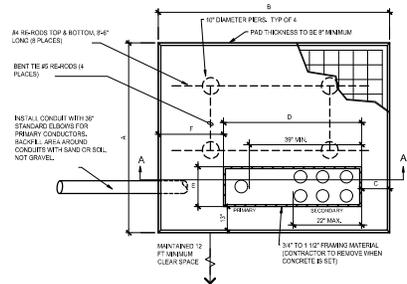
NEW FIBER OPTIC LINE TO BE ROUTED ALONG EXISTING ROAD AT EDGE OF CONSTRUCTION BOUNDARY BETWEEN SPlicing POINT AT THE NORTH AND WELLHOUSE AT THE SOUTH IN 3" HOPE CONDUIT.

CAP CONDUIT AND PLACE MARKER PIN. SURVEY TO PROVIDE LOCATION BASED ON PROPOSED FUTURE BUILDING FOOTPRINT.

ROUTE 3#2, #4GND IN 1-1/2" CONDUIT BETWEEN ELECTRICAL ROOM AND LOCATION OF EXISTING WELL PUMP. RECONNECT EXISTING WELL PUMP.

EXTEND 24 STRAND NEW FIBER OPTIC CABLE LINE TO EXISTING WELLHOUSE.

FURNISH AND INSTALL HANDHOLE. MINIMUM DIMENSIONS 30"D X 24"W X 36"L TO SPlicing EXISTING FIBER OPTIC LINE AT CCC PUMP HOUSE

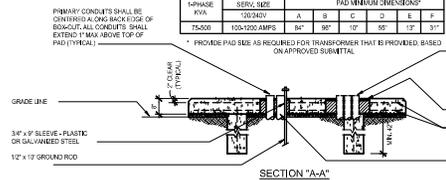


NOTES:

1. THE CONTRACTOR SHALL INSTALL A CONCRETE TRANSFORMER PAD FOR THE UNDERGROUND SERVICE (SINGLE PHASE TRANSFORMER).
2. A CLEAR SPACE OF 12" SHALL BE MAINTAINED IN FRONT OF THE TRANSFORMER TO PROVIDE WORKING SPACE FOR HOT-TICK OPERATION OF THE TRANSFORMER.
3. ADDITIONAL TRANSFORMER PAD FOUNDATION WALL SHALL BE USED FOR LOCATIONS HAVING FOOTINGS CONCRETE PAD OR A LARGE NUMBER OF SECONDARY CABLES.
4. VERIFY EXACT SIZE OF TRANSFORMER WITH APPROVED SUBMITTAL PRIOR TO ANY PAD WORK.
5. ALL CONDUITS SHALL ENTER THROUGH THE WINDOW OPENING PROVIDED IN THE PAD FOUNDATION. THESE CONDUITS SHALL BE CUT OFF TO THE TOP OF THE CONDUIT TO FLUSH WITH THE SURFACE OF THE CONCRETE PAD.
6. ALL METALLIC CONDUITS SHALL BE FITTED WITH AN INSULATING BUSHING.
7. CONCRETE MIX SHALL HAVE A MINIMUM STRENGTH OF 4000 LB/SQ. IN. AFTER 28 DAYS.
8. THE TOP OF PAD SHALL BE LEVEL AND ALL EDGES AND CORNERS ROUNDED OFF.
9. THE PAD SHALL BE REINFORCED WITH #4 WIRE, 4 X 4" WELDED MESH OR EQUIVALENT MATERIALS WITH FOOTING. REINFORCING RODS AROUND THE CABLE OPENING. THE MESH SHALL NOT BE LESS THAN 1" THICK AT THE EDGES AND DRIVING AND 7" BELOW THE SURFACE. IF THE AVAILABLE #4 REINFORCEMENT IS AVAILABLE, 2 LAYERS OF #4 WIRE OR #4 MESH HORIZONTALLY STAGGERED, MAY BE SUBSTITUTED FOR THE #4 WIRE.

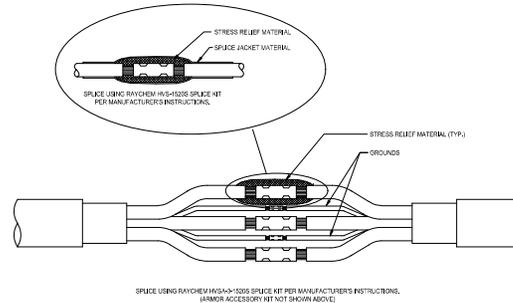
PAD DIMENSION SCHEDULE						
1-PHASE KVA	SERV. SIZE	A	B	C	D	E
75000	100-1200 AMP	54"	60"	10"	60"	3"

* PROVIDE PAD SIDE AS REQUIRED FOR TRANSFORMER THAT IS PROVIDED BASED ON APPROVED SUBMITTAL



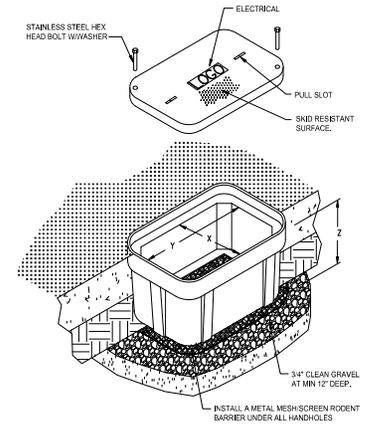
ACCEPTABLE OPTION TO OBTAIN AND INSTALL A SINGLE PHASE TRANSFORMER BOX FROM THE LOCAL REGULATORY AGENCY OR POLYMER-BASE TRANSFORMER PAD.

1 TYPICAL TRANSFORMER PAD DETAIL (FOR BIDDING PURPOSES)
SCALE: NONE



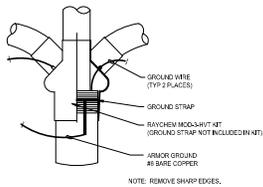
NOTE:
1. ALSO ACCEPTABLE TO PROVIDE AND INSTALL THREE (3) SINGLE MEDIUM VOLTAGE CABLES IN PLACE OF TRIPLEX CABLES.

2 TYPICAL 30K ARMORED 15KV CABLE SPlice DETAIL
SCALE: NONE



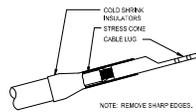
NOTES:
1. SNEEP CONDUITS UP THROUGH 3/4\"/>

3 TYPICAL HANDHOLE DETAIL
SCALE: NONE

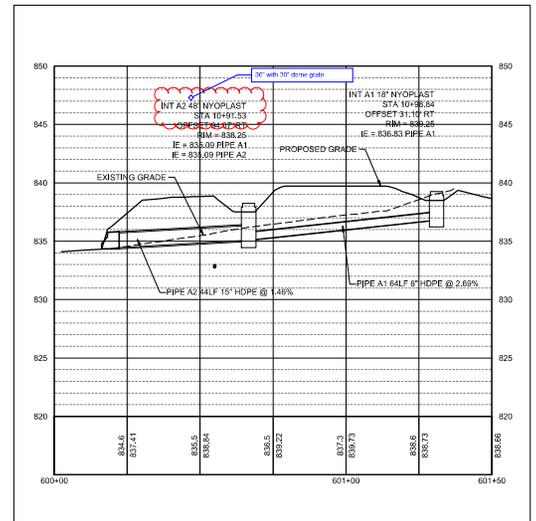
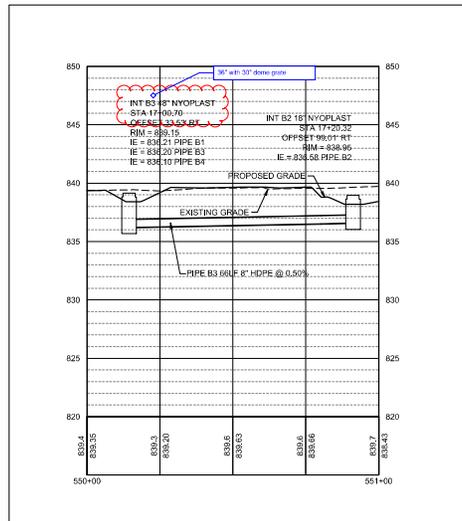
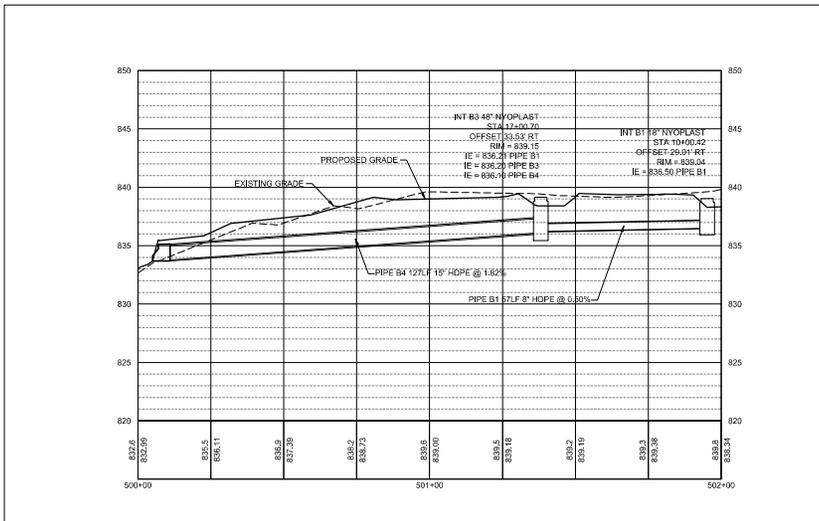
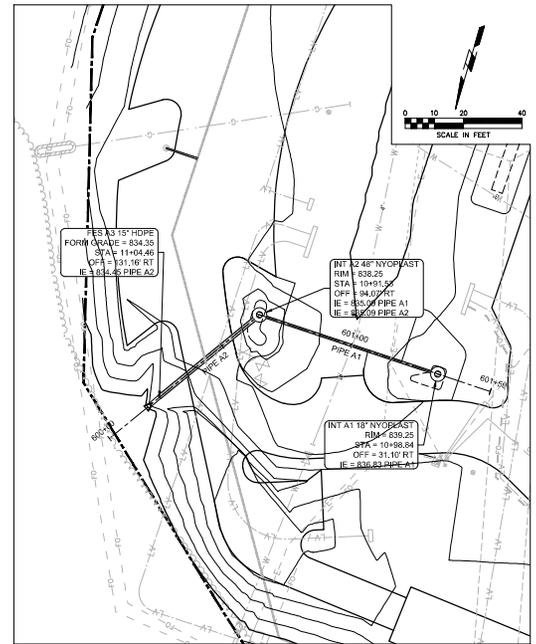
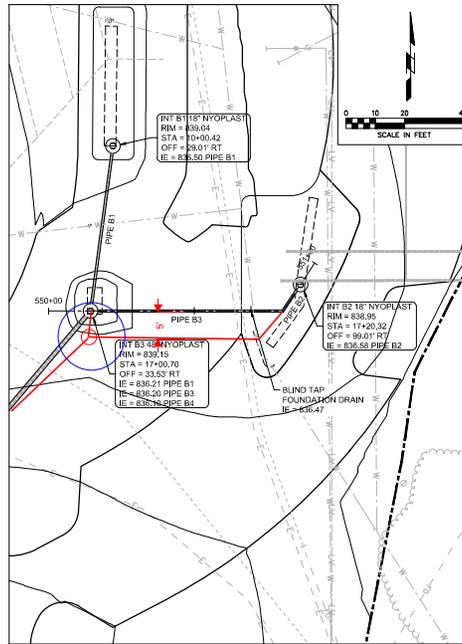
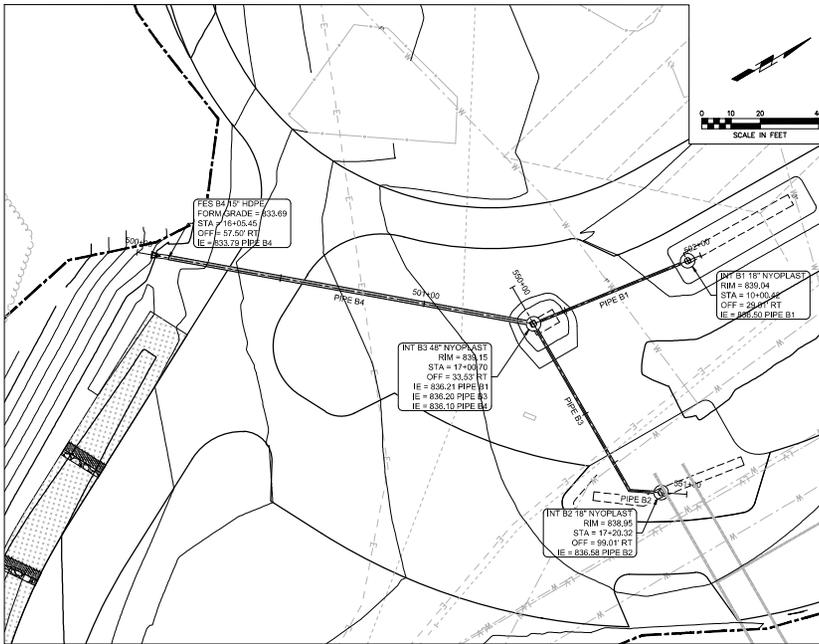


NOTE: REMOVE SHARP EDGES.

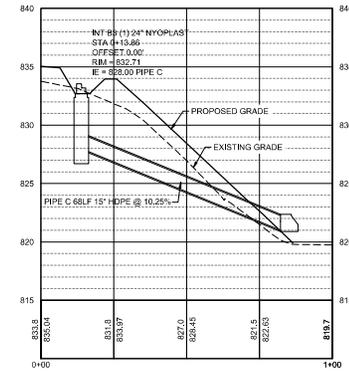
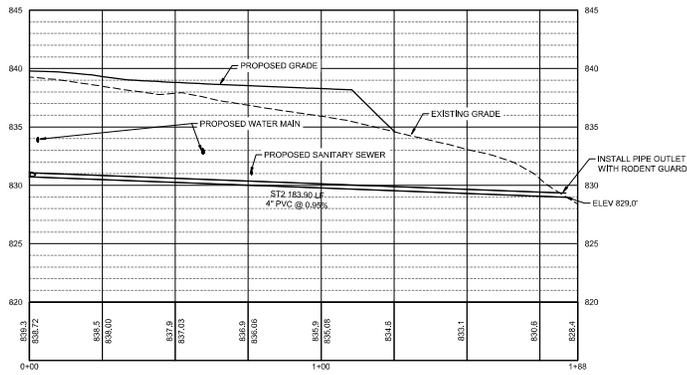
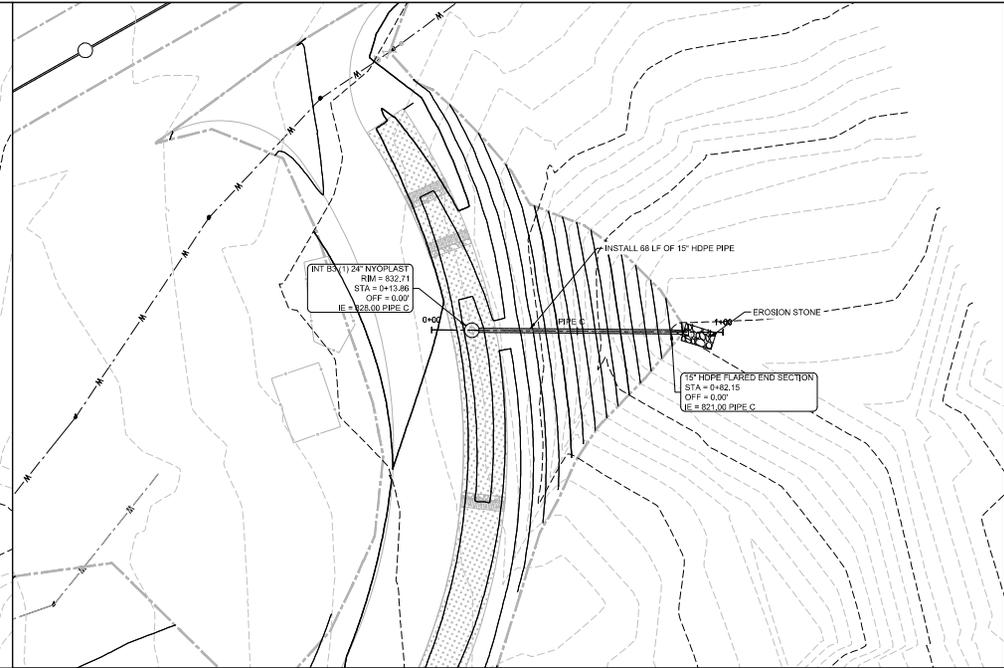
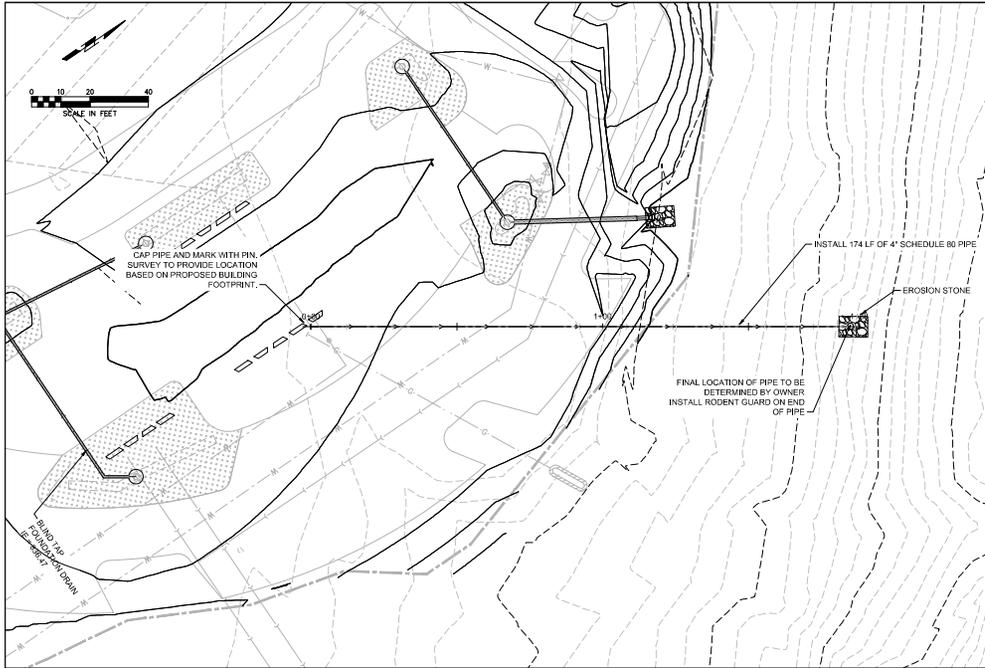
4 15KV MULTICONDUCTOR ARMORED CABLE BREAKOUT
SCALE: NONE



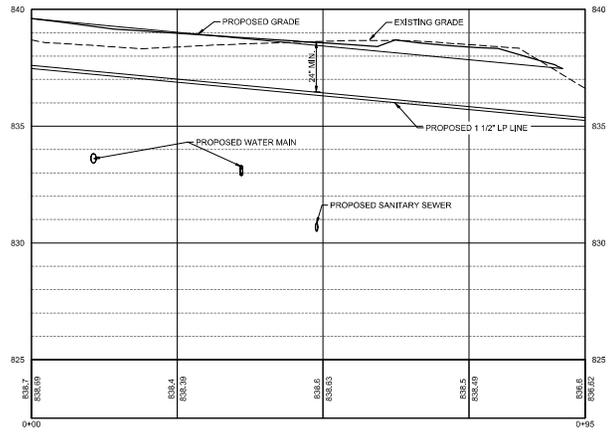
5 TYPICAL CABLE LUG TERMINATION
SCALE: NONE



NOTE: SEE U-SHEETS FOR INTAKE DETAILS



NOTE: SEE U-SHEETS FOR INTAKE DETAILS



NOTE: SEE U-SHEETS FOR INTAKE DETAILS

GENERAL INFORMATION

- CONSTRUCTION NOT SPECIFICALLY DETAILED OR SPECIFIED WITHIN THE PLANS OR IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO THE IOWA DEPARTMENT OF NATURAL RESOURCES AND THE FEDERAL ENVIRONMENTAL PROTECTION AGENCY SANITARY SEWERAGE SPECIFICATIONS.
- IOWA CODE 463. UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-6889, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS
- NOTIFY KENT PARK A MINIMUM OF 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE TRAFFIC AND PEDESTRIAN CONTROL MEASURES (SIGNS, BARRICADES, FLAGGERS, ETC.) THROUGHOUT ALL CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN EXISTING FIELD CONDITIONS BEFORE BIDDING ON THIS PROJECT, ORDERING MATERIALS, AND BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITIES REGARDING RELOCATION, ADJUSTMENT OR TEMPORARY SUPPORT OF THEIR FACILITIES.
- MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
- SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS, SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES. CONTROL DUST SPREADING FROM ALL WORK AND STAGING AREAS.
- ALL OPEN EXCAVATIONS SHALL BE PROTECTED AS PER REGULATOR REQUIREMENTS.
- KEEP ADJACENT PUBLIC STREETS FREE FROM SOIL AND DEBRIS GENERATED BY THE PROJECT.
- PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
- PROTECT ALL EXISTING FEATURES (INCLUDING BUT NOT LIMITED TO WALLS, TREES, LANDSCAPING, DRIVEWAYS, SIDEWALKS, CURBS, PAVEMENT, UTILITIES, ETC.) NOT SPECIFICALLY NOTED FOR REMOVAL. FEATURES NOT DESIGNATED FOR REMOVAL THAT ARE DAMAGED OR REMOVED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE MEANS AND METHODS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.
- THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION, EXISTENCE, AND THE DETERMINATION OF THE EXACT LOCATION OF UTILITY MAINS, STRUCTURES, AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE COMPLETED PRIOR TO ANY CONSTRUCTION.
- NOTIFY UTILITY COMPANIES WITH FACILITIES SHOWN ON THE PLANS OR KNOWN TO BE WITHIN CONSTRUCTION LIMITS OF THE SCHEDULE PRIOR TO EACH STAGE OF CONSTRUCTION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION.
- A PRE-CONSTRUCTION MEETING SHALL BE HELD FOLLOWING ISSUANCE OF THE NOTICE TO PROCEED BUT PRIOR TO COMMENCING WORK.
- ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SET FORTH AS A SPECIFIC BID ITEM, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.
- IT IS INTENDED THAT ALL COSTS OF MATERIALS, EQUIPMENT, TOOL, S, LABOR AND INCIDENTALS BE PAID FOR UNDER THE ITEMS LISTED ON THE BIDDERS PROPOSAL. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS, SPECIAL PROVISIONS AND THE JOB SITE. IF ANY DISCREPANCIES OR DELETIONS OCCUR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPORT TO SHIVE-HATTERY, INC. IN WRITING AND OBTAIN WRITTEN CLARIFICATION AND/OR INSTRUCTIONS ON HOW TO PROCEED.
- FOR ITEMS SPECIFIED WITH AN "APPROVED EQUIVALENT" OR "APPROVED EQUAL," THE APPROVAL SHALL BE BY THE ENGINEER.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL GRADING AND SEEDING ACTIVITIES, ENSURE AREA TO BE SEEDS IS RELATIVELY SMOOTH, SOV SEED ONLY AT TIMES OF THE YEAR WHEN TEMPERATURE, MOISTURE, AND CLIMATIC CONDITIONS WILL PROMOTE GERMINATION AND PLANT GROWTH.

SANITARY SEWERAGE INFORMATION

- FORCE MAIN MATERIAL SHALL BE PVC 2'-SO4 80 PVC.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ANY EXISTING UTILITIES IN THE PROJECT AREA PRIOR TO ANY CONSTRUCTION. CONTRACTOR WILL PROTECT ALL EXISTING UTILITIES FROM CONSTRUCTION WORK.

SPECIFICATIONS

- MANHOLES SHALL CONFORM TO APPLICABLE SECTIONS OF SUDAS DIVISION 6, SECTION 6010 (MATERIAL AND INSTALLATION) AND SECTION 6030 (TESTING).
- SEPTIC TANKS AND PUMP TANKS SHALL MEET IDNR 567 CHAPTER 69 REQUIREMENTS.
- SOIL ABSORPTION TRENCHES (LATERALS) SHALL MEET IDNR CHAPTER 69.9(3) AND 69.9 (4). IF LIMESTONE OR CRUSHED ROCK IS PROPOSED THE MATERIAL SHALL BE WASHED TO REMOVED FINES NO MORE THAN 5% SHALL PASS #100 SIEVE. A SIEVE ANALYSIS SHALL BE SUBMITTED BEFORE ANY MATERIAL IS DELIVERED TO THE PROJECT LOCATION. IF LIMESTONE OR CRUSHED ROCK IS USED THE CONTRACTOR SHALL PROVIDE TESTING DATA AS NOTED IN 69.9(4).
- CHAMBERS, GRAVELLESS PIPE, AND ESP SHALL NOT BE USED.
- DROP BOXES WILL BE TUFF-TITE WITH INSPECTION LIDS, OR APPROVED EQUAL. THE INSPECTION PIPE SHALL BE 4-INCH SCH 80 WITH A FLAT TOP CAP FLUSH WITH GRADE. PLACE A 6'X 8'X 2" CONCRETE PATIO BLOCK OVER THE CAP.
- ALL PIPE BETWEEN DROP BOXES, AND FROM DROP BOX TO LATERAL PIPE SHALL BE 4" SCH 80 PVC.
- LATERAL PIPE SHALL MEET CHAPTER 69.9(4) REQUIREMENTS.
- GRAVEL COVER SHALL BE SYNTHETIC FABRIC.
- SEPTIC TANK ADAPTER KIT, RISERS, AND HEAVY DUTY LIDS SHALL BE POLYLOCK, TUFF-TITE, OR EZ-SET. LIDS SHALL BE HEAVY DUTY WITH SS SCREWS, ALL WATER TIGHT CONNECTIONS.

PUMP TANK, PUMP AND CONTROL NOTES:

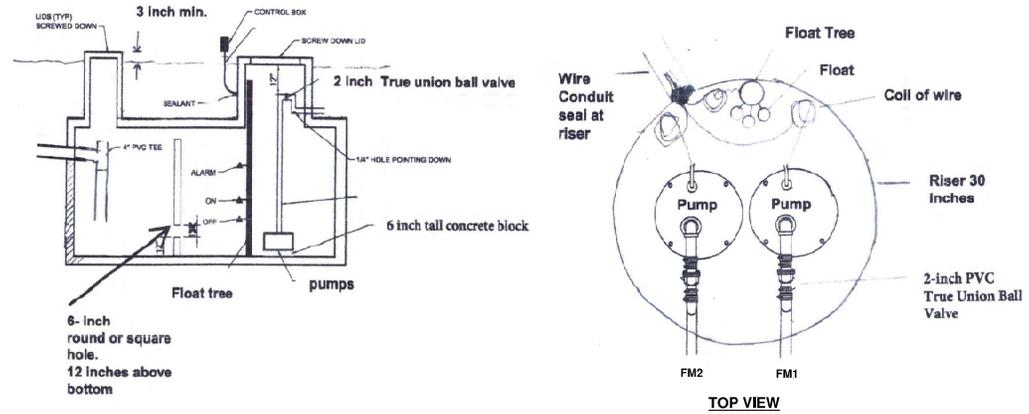
- PUMP TANK SHALL BE A CONCRETE 2,500 GALLON DOUBLE COMPARTMENT SEPTIC TANK MEETING CHAPTER 69 REQUIREMENTS. THE DIVIDING WALL SHALL HAVE A 6 INCH DIAMETER OR SQUARE HOLE 12 INCHES ABOVE THE INSIDE BOTTOM OF THE TANK.
- PUMP RISER SHALL BE 30 INCHES IN DIAMETER.
- PUMPS SHALL BE LIBERTY FL31M WITH ENOUGH ELECTRIC CABLE INSIDE TANK TO BE ABLE TO PULL PUMP OUT OF TANK WITHOUT DISCONNECTING ANY WIRES.
- 115V, 10.5 FLA, PUMP CONTROL, CSI CONTROLS RK SERIES SINGLE PHASE DUPLEX 4-20mA CONTROL PANEL.
- FLOAT TREE SHALL BE FOR 3 FLOATS (OFF, TIMER ON, ALARM). THERE SHALL BE ENOUGH FLOAT CORD INSIDE TANK TO ALLOW FLOAT TREE TO BE REMOVED WITHOUT DISCONNECTING ANY WIRES. FLOAT SETTINGS:
 - OFF - 3 INCHES ABOVE PUMP.
 - TIMER ON - SET AT 100 GALLONS ABOVE OFF.
 - ALARM - SET AT 12 INCHES BELOW INLET.
- SET TIMER:
 - ON - 4 MINUTES
 - OFF - 28 MINUTES
 - ALTERNATE THE PUMPS EACH TIME THE PUMP COMES ON.
- USE 2 INCH ELECTRICAL CONDUIT FROM PUMP RISER TO CONTROL PANEL. SEAL BOTH ENDS WATER AND GAS TIGHT.

LATERAL FIELD INSTALLATION

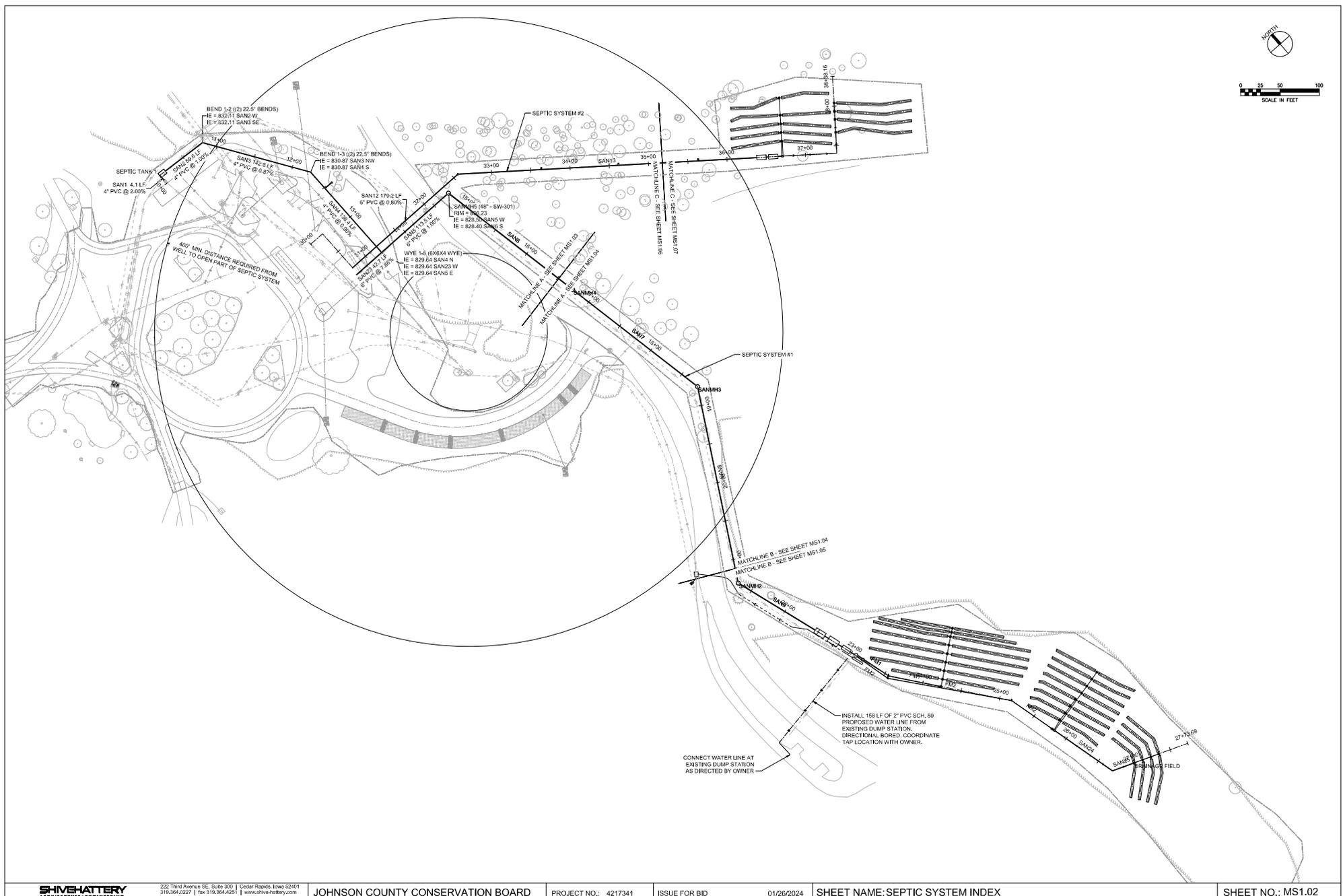
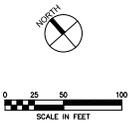
- THE SEPTIC TANK AND LATERAL FIELD INSTALLER MUST HAVE A CERTIFIED INSTALLER OF ONSITE WASTEWATER TREATMENT SYSTEMS (COWTS) CREDENTIAL.
- CONTRACTOR IS RESPONSIBLE TO LAYOUT/STAKE THE LATERAL LINES AND D-BOXES. THE LATERAL FIELDS ARE SHOWN GENERALLY WHERE THEY WILL BE PLACED. THE SITE SLOPES DOWN AND HAS A ROLLING SURFACE IN SOME AREAS. FIELD ADJUSTMENTS WILL BE REQUIRED. CONTACT THE ENGINEER A MINIMUM 1 WEEK PRIOR TO LATERAL FIELD STAKING. THE ENGINEER WILL PROVIDE GUIDANCE IN THE STAKING THE LATERALS AND D-BOXES.
- ONLY INSTALL THE LATERALS WHEN THE SOIL MOISTURE IS SATISFACTORY. THE SATISFACTORY MOISTURE SHALL BE CHECKED 2-3 INCHES BELOW THE BOTTOM OF THE TRENCH. TAKE A SAMPLE OF THE SOIL AT THIS DEPTH AND WORK THE SOIL TO MAKE THE SOIL A UNIFORM SAMPLE. ROLL INTO A SMALL BALL ABOUT THE SIZE OF A MARBLE. TRY TO ROLL THE BALL INTO A SMALL PENCIL SHAPE WIRE ABOUT 1/8 INCH IN DIAMETER. IF THE WIRE CAN BE FORMED AND NOT CRUMBLE APART THE SOIL IS TOO WET AND THE LATERAL TRENCHES MUST NOT BE EXCAVATED AT THIS TIME. IF THE WIRE CRUMBLES APART BEFORE REACHING 1/8 INCH THE SOIL IS OKAY TO EXCAVATE THE TRENCHES.
- NEVER INSTALL THE LATERALS WHEN THERE IS FROST IN THE GROUND.

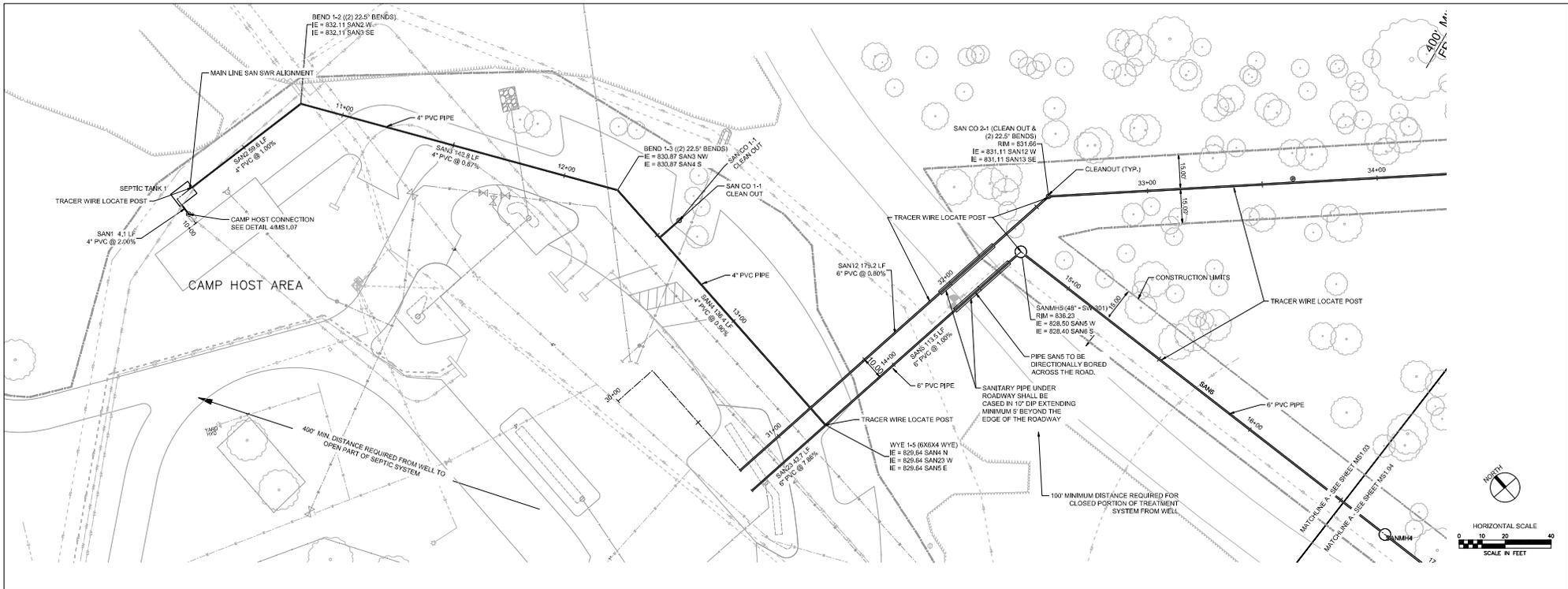
SANITARY SEWER INFORMATION						
PIPE NUMBER	PIPE SIZE	FROM	TO	SLOPE	LENGTH	
SAN 1	4" PVC	CLEANOUT	SEPTIC TANK 1	-3.00%	4.00'	
SAN 2	4" PVC	SEPTIC TANK 1	BEND 1-2	-1.00%	56.55'	
SAN 3	4" PVC	BEND 1-2	BEND 1-3	-6.87%	142.78'	
SAN 4	4" PVC	BEND 1-3	WYE 1-5	-9.90%	136.42'	
SAN 5	6" PVC	WYE 1-5	SANMH5	-1.00%	113.54'	
SAN 6	6" PVC	SAN MH5	SAN MH4	-1.00%	200.38'	
SAN 7	6" PVC	SAN MH4	SAN MH3	-1.00%	201.07'	
SAN 8	6" PVC	SAN MH3	SAN MH2	-1.00%	255.32'	
SAN 9	6" PVC	SAN MH2	SEPTIC TANK	-1.30%	114.96'	
SAN 10	4" PVC	SHOWER HOUSE	BEND 2-1	-1.00%	14.42'	
SAN 11	6" PVC	BEND 2-1	BEND 2-2	-2.27%	57.82'	
SAN 12	6" PVC	BEND 2-2	SAN CD 2-1	-4.89%	179.19'	
SAN 13	6" PVC	SAN CD 2-1	SEPTIC TANK 2	-4.93%	381.10'	
SAN 14	4" PVC	SHOWER HOUSE	BEND 1-1	-3.77%	12.42'	
SAN 15	6" PVC	BEND 1-1	WYE 1-1	-1.00%	12.17'	
SAN 16	6" PVC	WYE 1-1	WYE 1-2	-1.00%	14.60'	
SAN 17	6" PVC	WYE 1-2	WYE 1-3	-1.00%	12.17'	
SAN 18	6" PVC	WYE 1-3	WYE 1-4	-1.00%	14.60'	
SAN 19	4" PVC	SHOWER HOUSE	WYE 1-1	-4.42%	13.33'	
SAN 20	4" PVC	SHOWER HOUSE	WYE 1-2	-5.59%	13.33'	
SAN 21	4" PVC	SHOWER HOUSE	WYE 1-3	-6.93%	12.42'	
SAN 22	4" PVC	SHOWER HOUSE	WYE 1-4	-8.33%	12.00'	
SAN 23	6" PVC	WYE 1-4	WYE 1-5	-7.98%	42.70'	
SAN 24	4" PVC	FM 2	SANZ5	-1.00%	89.74'	
SAN 25	4" PVC	SANZ4	DRAINAGE FIELD	-1.00%	28.80'	
FM 1	2" PVC	PUMP	D-BOX		BACK TO PUMP	112.00'
FM 2	2" PVC	PUMP	D-BOX		BACK TO PUMP	272.00'

MINIMUM 42" BURY DEPTH. SLOPE BACK TO PUMP TANK.

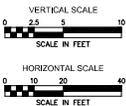
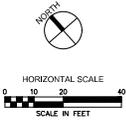
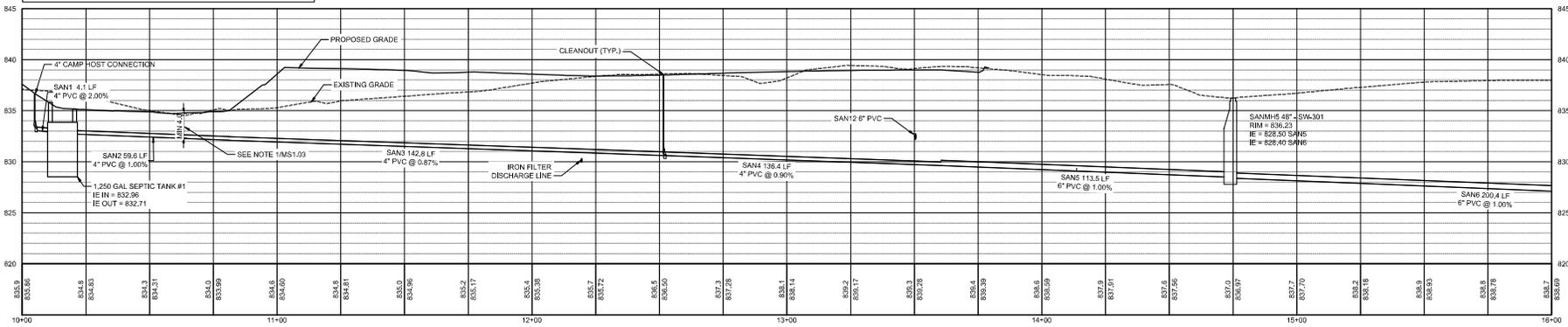


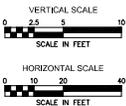
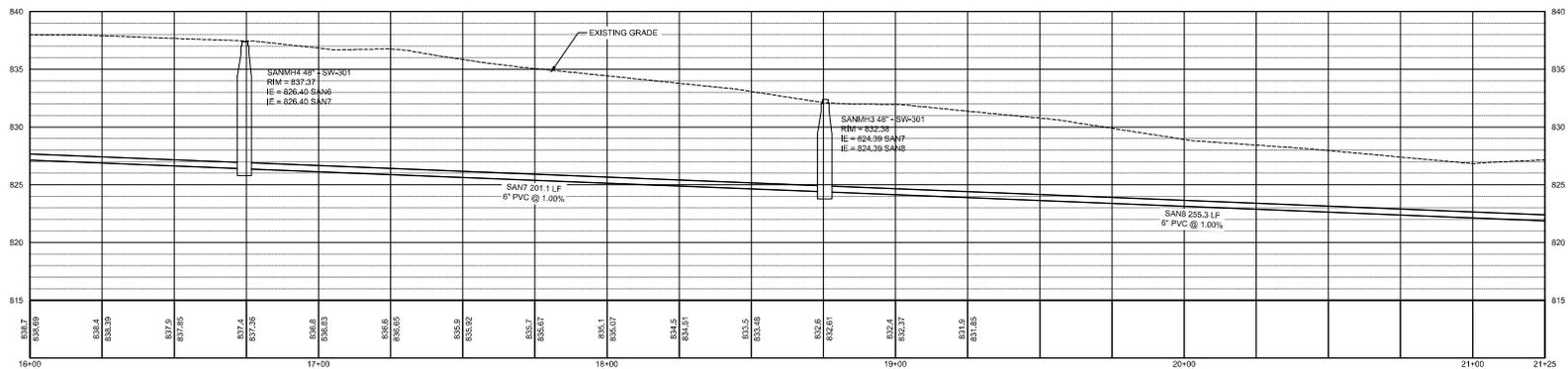
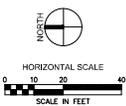
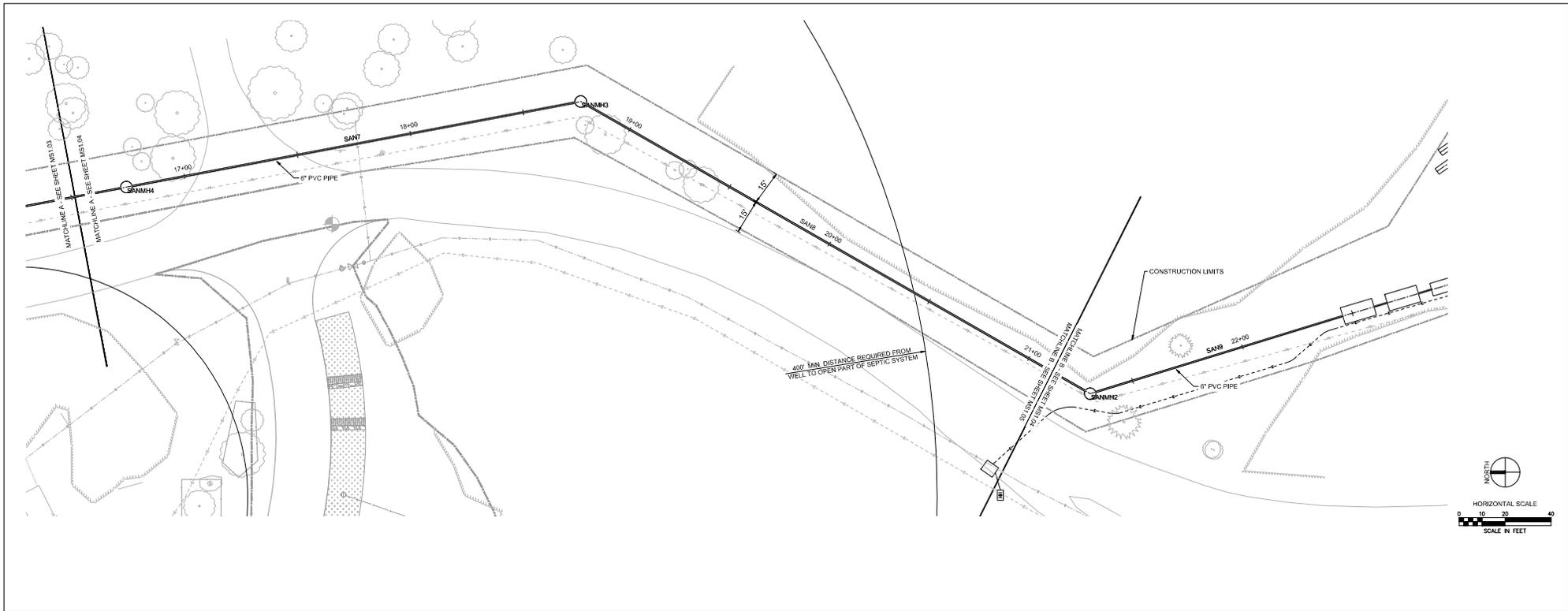
1 PUMP DETAIL
N.T.S.

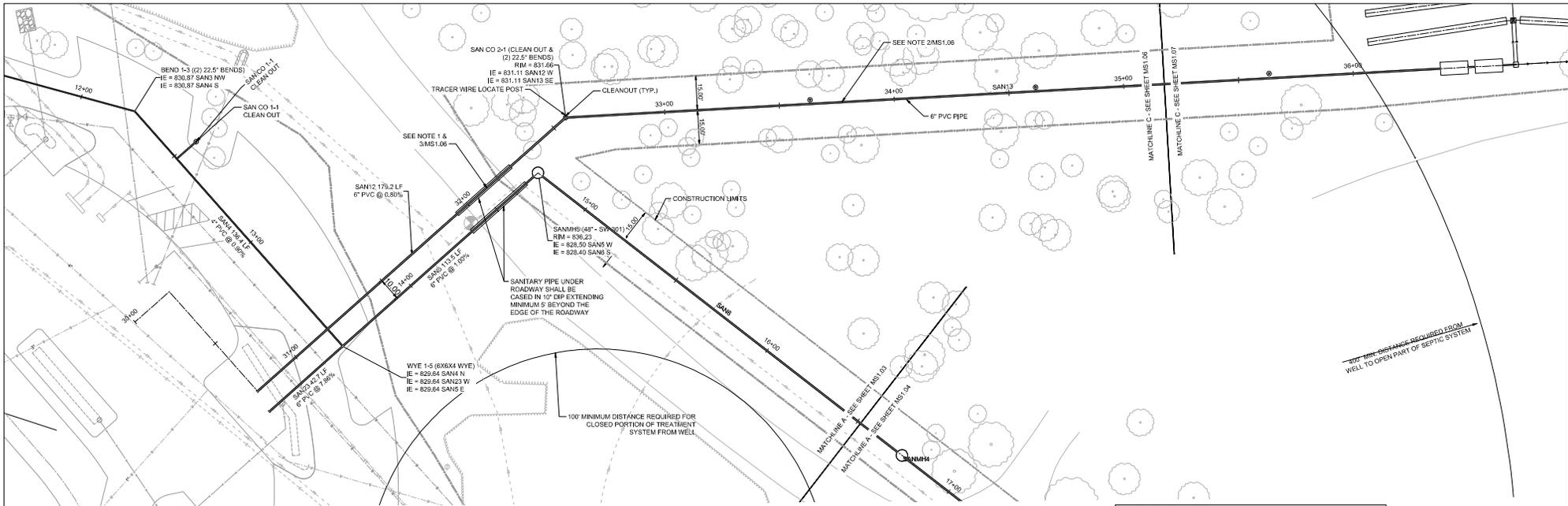




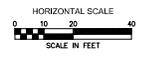
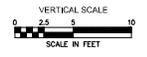
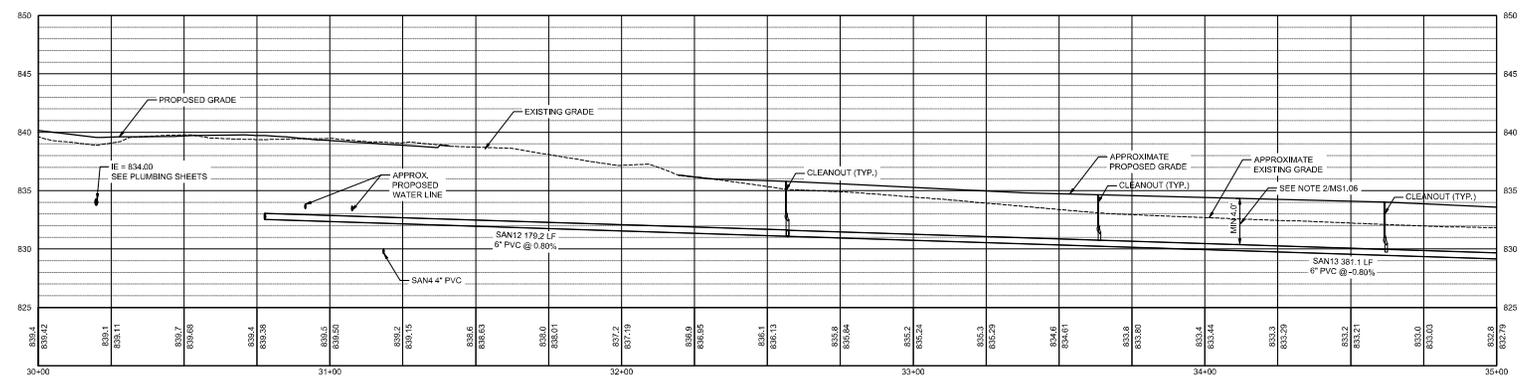
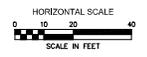
- GENERAL NOTES:**
1. FROM SEPTIC TANK 1 TO STATION 10+88, CONTRACTOR SHALL PLACE 2 INCH X 48 INCH POLYSTYRENE CENTERED OVER PIPE (APPROXIMATELY 68 LF).
 2. SEPTIC TANK #1 IS 1,250 GALLON CONCRETE TANK WITH POLYLOK FILTER ON OUTLET FL-22.

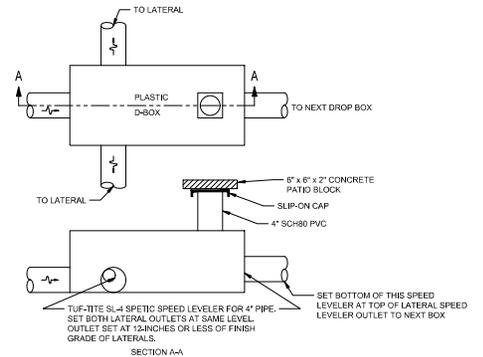
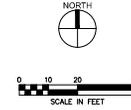
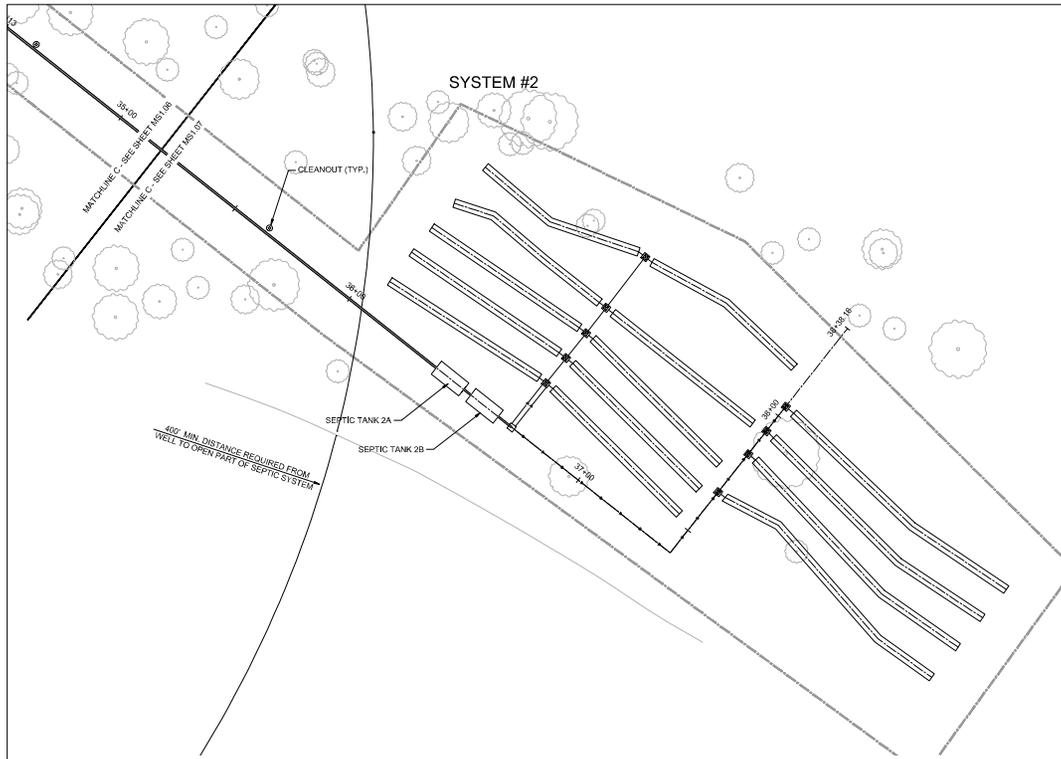




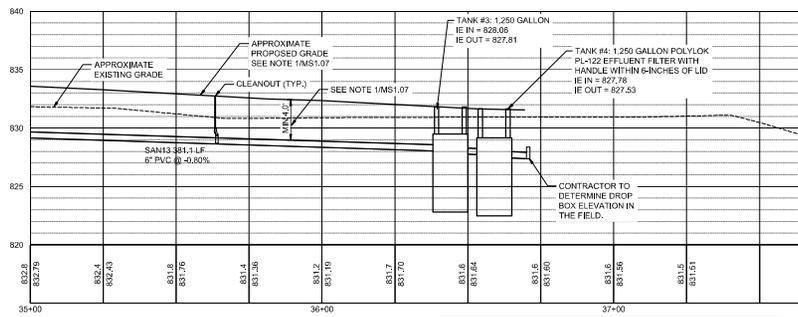


- GENERAL NOTES:**
1. FROM STATION 32+00 - 35+00, CONTRACTOR SHALL PLACE 2 INCH X 48 INCH POLYSTYRENE CENTERED OVER PIPE (APPROXIMATELY 30\"/>
 - 2. WHERE THERE IS LESS THAN 4 FEET OF SOIL COVER OVER PIPE, CONTRACTOR TO PLACE FILL ON TOP OF EXISTING GROUND OVER TOP OF PIPE TO BRING COVER TO 4 FOOT MINIMUM. CONTRACTOR TO FEATHER SOIL DOWN FROM CENTER OF PIPE TO TREE LINE ON EACH SIDE. REFER TO F SHEETS FOR GRADING DETAILS. GRADING NOTES ON SHEET A1.01 APPLIES. AREA FROM APPROXIMATELY STATION 32+00 - 35+00 IS ANTICIPATED TO NEED FILL TO MEET MINIMUM COVER REQUIREMENT.
 - 3. CONTRACTOR TO REMOVE AND REPLACE APPROXIMATELY 25 SY OF ASPHALT PARK ROAD AND SUBBASE TO INSTALL PIPE SAN 12. MATCH EXISTING SUBBASE AND PAVEMENT SECTIONS. CONTRACTOR TO PROVIDE OWNER MINIMUM 7 BUSINESS DAYS NOTICE PRIOR TO CLOSING THE PARK ROAD FOR PIPE SAN 12 INSTALLATION. CONTRACTOR TO COORDINATE WITH OWNER ON CLOSURE OF THE ROAD AND LENGTH OF CLOSURE PRIOR TO CONSTRUCTION.





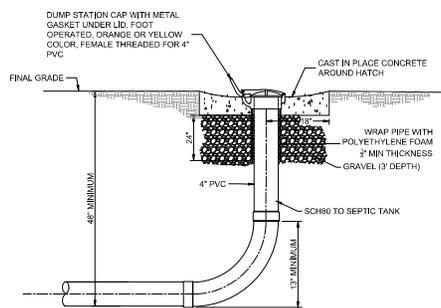
1 DROP BOX DETAIL
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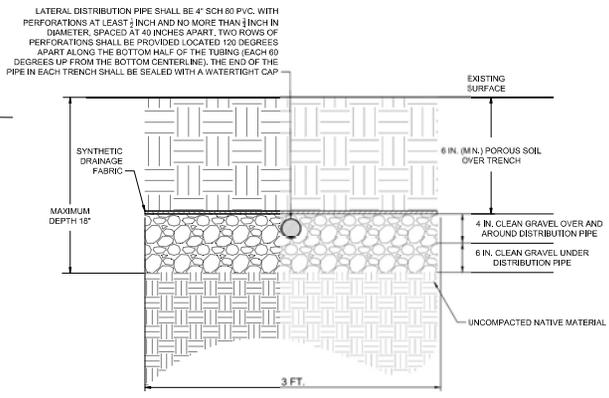
GENERAL NOTES:

1. WHERE THERE IS LESS THAN 4 FEET OF SOIL COVER OVER PIPE, CONTRACTOR TO PLACE FILL ON TOP OF EXISTING GROUND OVER TOP OF PIPE TO BRING COVER TO 4 FOOT MINIMUM. CONTRACTOR TO FEATHER SOIL DOWN FROM CENTER OF PIPE TO TREE LINE ON EACH SIDE. REFER TO P SHEETS FOR GRADING DETAILS, GRADING NOTES ON SHEET AS APPLIES. AREA FROM APPROXIMATELY STA 36+00 - 36+53 IS ANTICIPATED TO NEED FILL TO MEET MINIMUM COVER REQUIREMENT.

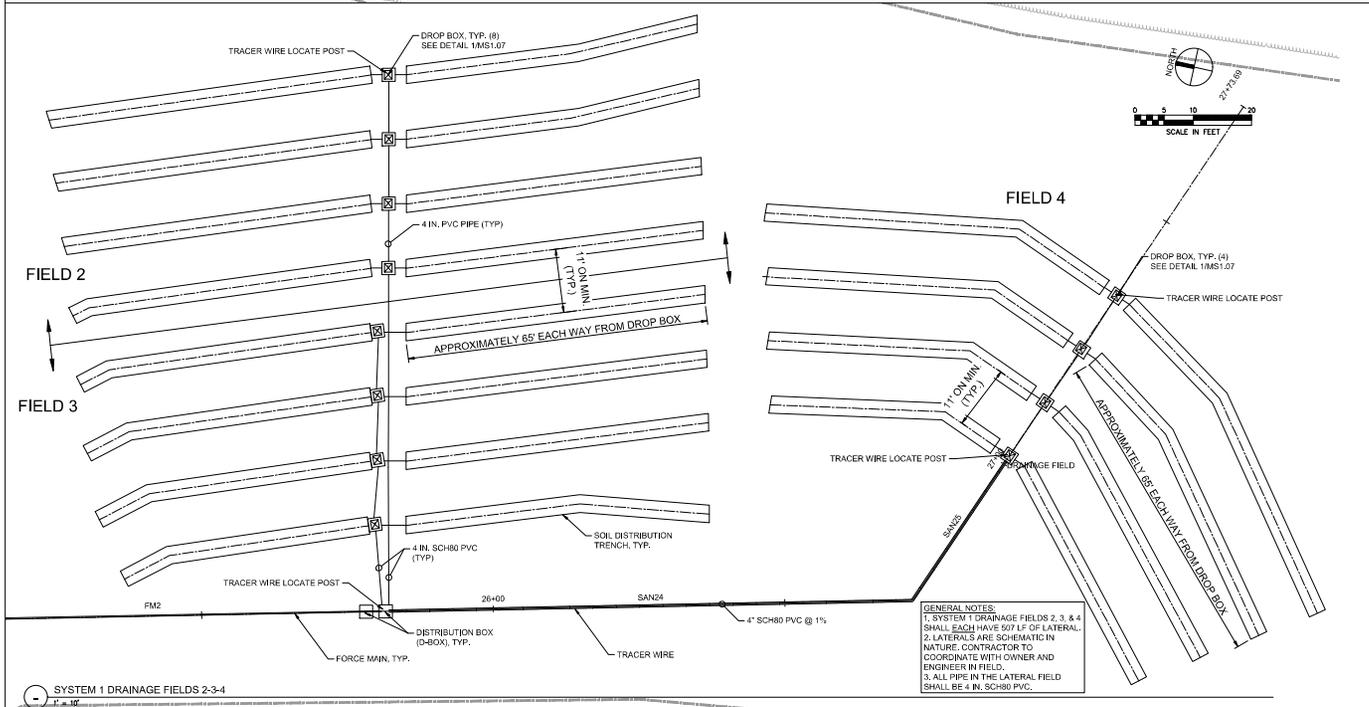
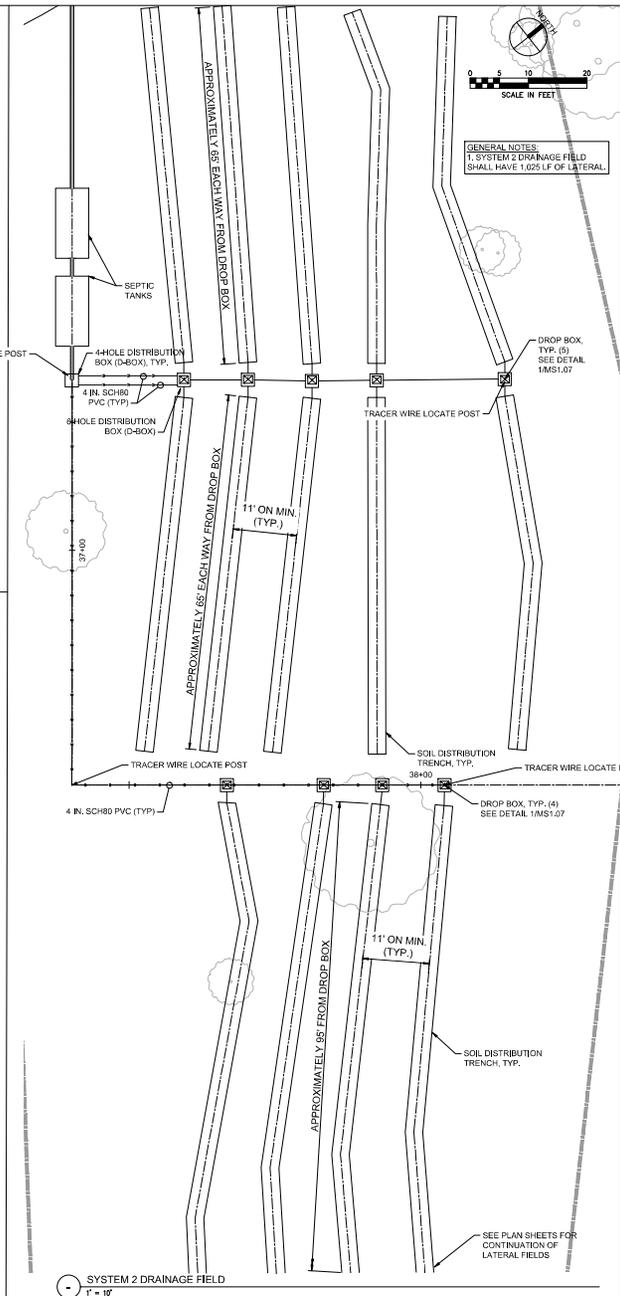
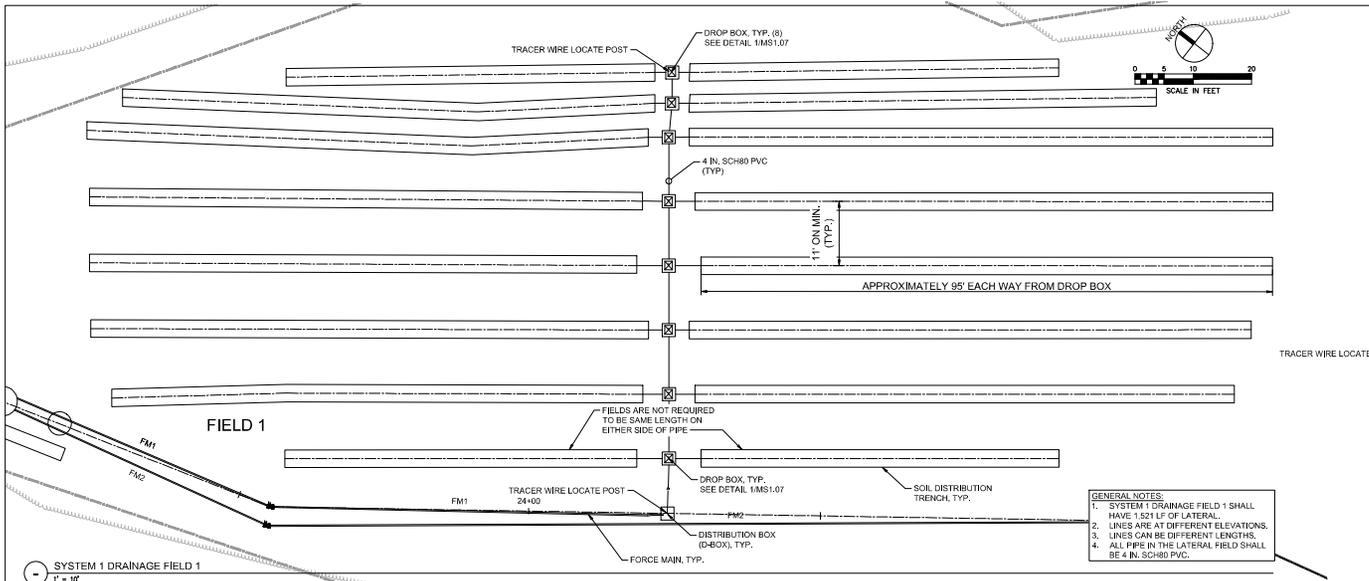
2. TANKS #3 AND #4 SHALL BE 1,250 GALLON PLASTIC TANK AND SHALL BE ROTH, INFILTRATOR OR COON TANK. BACKFILL WITH CRUSHED ROCK OR CRUSHED CONCRETE MINIMUM 24" UP ALL SIDES WITH 12" UNDER TANK. USE HEAVY DUTY FLAT TOP SCREW DOWN LIDS PLACED FLUSH WITH FINAL GRADE.

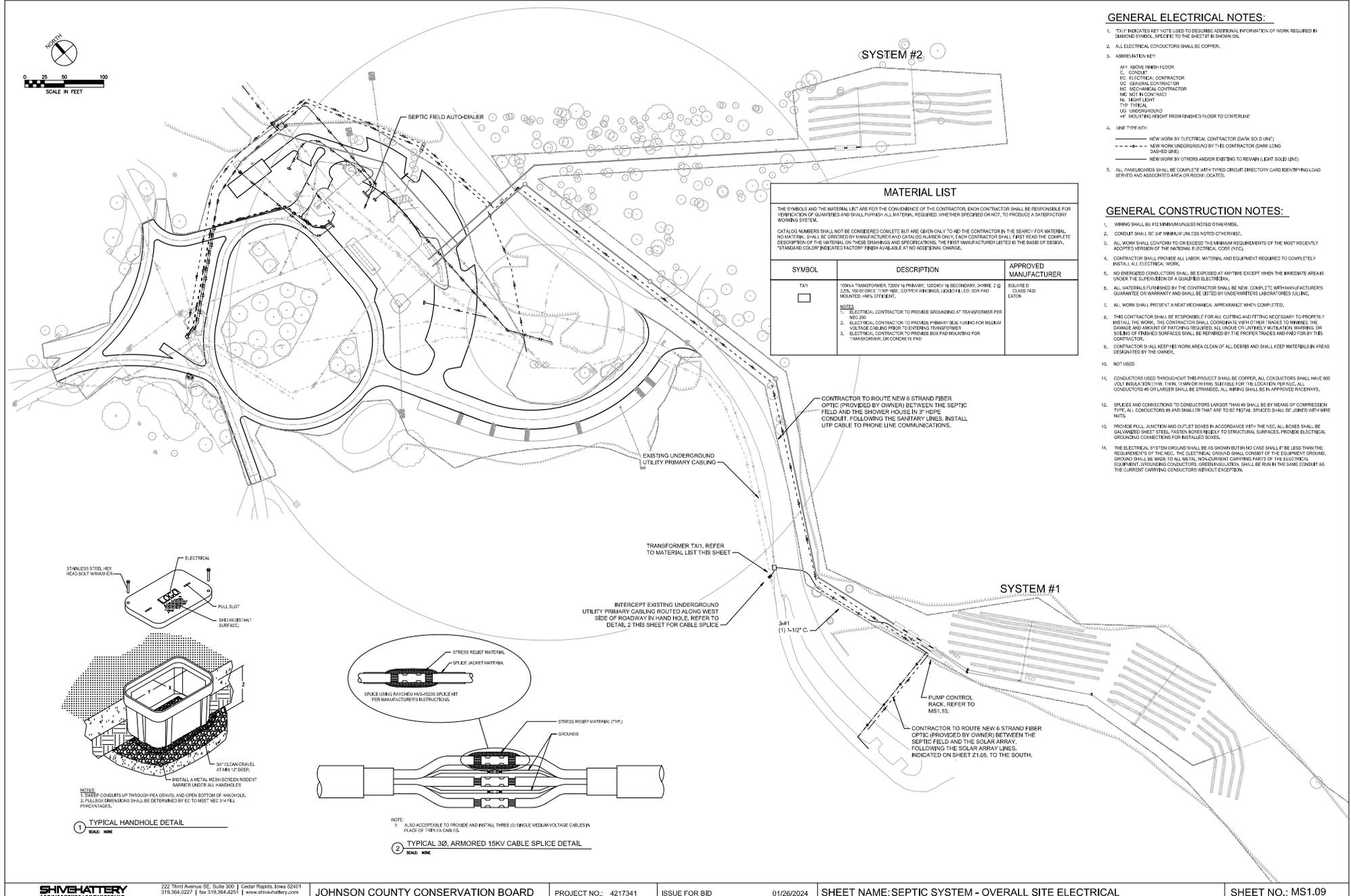


4 CAMPSITE SEWER DROP
NOT TO SCALE



3 SOIL ABSORPTION TRENCH DETAIL
NOT TO SCALE

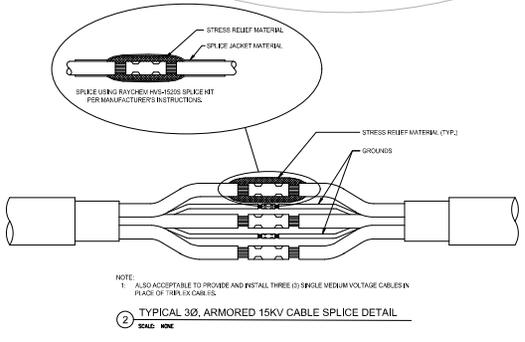
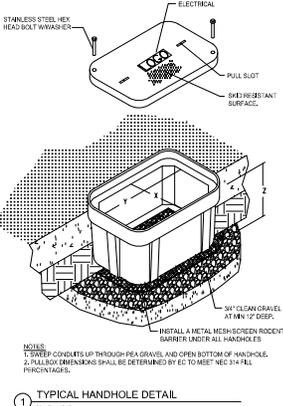




MATERIAL LIST		
THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL, REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.		
CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURERS AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS, THE FIRST MANUFACTURER LISTED IN THE NAME OF DESIGN, "STANDARD COLOR" INDICATED FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.		
SYMBOL	DESCRIPTION	APPROVED MANUFACTURER
TX1	100KVA TRANSFORMER, 200V 16 PRIMARY, 120/240V 16 SECONDARY, 3PHASE 3 W, 225% NO. OVERSILE, 1" TOP HOLE, COPPER WINDINGS, LIQUID FILLED, BOX PAD MOUNTED, 48" HIGH EFFICIENT.	SQUARE CLASS 7432 EXTON
NOTES 1. ELECTRICAL CONTRACTOR TO PROVIDE GROUNDING AT TRANSFORMER PER NEC 250. 2. ELECTRICAL CONTRACTOR TO PROVIDE PRIMARY SIDE WIRING FOR MEDIUM VOLTAGE CABLING PRIOR TO ENTERING TRANSFORMER. 3. ELECTRICAL CONTRACTOR TO PROVIDE BOX PAD MOUNTING FOR TRANSFORMER, OR CONCRETE PAD.		

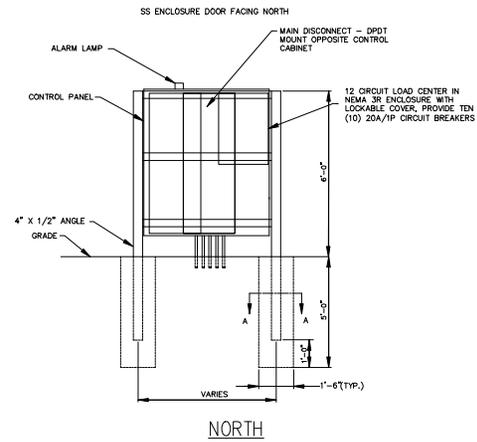
- ### GENERAL ELECTRICAL NOTES:
- TX1 INDICATES KEY NOTE USED TO DESCRIBE ADDITIONAL INFORMATION OF WORK REQUIRED IN DIAMOND BY BOX, SPECIFIC TO THE SHEET IT IS SHOWN ON.
 - ALL ELECTRICAL CONDUCTORS SHALL BE COPPER.
 - ABBREVIATION KEY:
 AFF ABOVE FINISH FLOOR
 C. CONDUIT
 EC ELECTRICAL CONTRACTOR
 GC GENERAL CONTRACTOR
 MC MECHANICAL CONTRACTOR
 NS NOT IN CONTRACT
 NL NIGHT LIGHT
 TY TYPICAL
 UG UNDERGROUND
 4" 4" HEIGHT FROM FINISHED FLOOR TO CENTERLINE
 - LINE TYPE KEY:
 --- NEW WORK BY ELECTRICAL CONTRACTOR (DARK SOLID LINE)
 - - - - NEW WORK UNDERGROUND BY THE CONTRACTOR (DARK LONG DASHED LINE)
 - - - - NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
 - ALL PANELBOARDS SHALL BE COMPLETE 4TH TYPE CIRCUIT BREAKER CIRCUIT BREAKING LOAD SERVED AND ASSOCIATED AREA OR ROOM LOCATED.

- ### GENERAL CONSTRUCTION NOTES:
- WIRING SHALL BE 1/2" MINIMUM UNLESS NOTED OTHERWISE.
 - CONDUIT SHALL BE 3/4" MINIMUM UNLESS NOTED OTHERWISE.
 - ALL WORK SHALL CONFORM TO OR EXCEED THE MINIMUM REQUIREMENTS OF THE MOST RECENTLY ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE (NEC).
 - CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO COMPLETELY INSTALL ALL ELECTRICAL WORK.
 - NO ENERGIZED CONDUCTORS SHALL BE EXPOSED AT ANY TIME EXCEPT WHEN THE IMMEDIATE AREAS UNDER THE SUPERVISION OF A QUALIFIED ELECTRICIAN.
 - ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, COMPLETE WITH MANUFACTURERS GUARANTEE OR WARRANTY AND SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL).
 - ALL WORK SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
 - THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND FITTING NECESSARY TO PROPERLY FINISH THE WORK. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO MINIMIZE THE DAMAGE AND AMOUNT OF PATCHING REQUIRED. ALL UNLACED OR UNFINISHED MATERIAL, MARKING, OR SURFACE FINISHED SURFACES SHALL BE REPAIRED BY THE PROPER TRADES AND PAID FOR BY THE CONTRACTOR.
 - CONTRACTOR SHALL KEEP HIS WORK AREA CLEAN OF ALL DEBRIS AND SHALL KEEP MATERIALS IN AREAS DESIGNATED BY THE OWNER.
 - NOT USED.
 - CONDUCTORS USED THROUGHOUT THIS PROJECT SHALL BE COPPER. ALL CONDUCTORS SHALL HAVE 600 VOLT INSULATION (TW, THHN, THHW OR THWN) SUITABLE FOR THE LOCATION. REFER TO ALL CONDUCTORS 48" OR LARGER SHALL BE STRANDED. ALL WIRING SHALL BE IN APPROVED RACEWAYS.
 - SPLICES AND CONNECTIONS TO CONDUCTORS LARGER THAN SHALL BE BY MEANS OF COMPRESSION TYPE. ALL CONDUCTORS 48" AND SMALLER THAT ARE TO BE INSTALLED SHALL BE JOINED WITH WIRE NUTS.
 - PROVIDE PULL AND OUTLET BOXES IN ACCORDANCE WITH THE NEC. ALL BOXES SHALL BE GALVANIZED SHEET STEEL, FASTEN BOXES PROUDLY TO STRUCTURAL SURFACES. PROVIDE ELECTRICAL GROUNDING CONNECTIONS FOR INSTALLED BOXES.
 - THE ELECTRICAL SYSTEM GROUND SHALL BE AS SHOWN BUT IN NO CASE SHALL BE LESS THAN THE REQUIREMENTS OF THE NEC. THE ELECTRICAL GROUND SHALL CONSIST OF THE EQUIPMENT GROUND. GROUND SHALL BE MADE TO ALL METAL, NON-CURRENT CARRYING PARTS OF THE ELECTRICAL EQUIPMENT, GROUNDING CONDUCTORS, GREEN/INSULATION, SHALL BE RUN IN THE SAME CONDUIT AS THE CURRENT CARRYING CONDUCTORS UNLESS OTHERWISE NOTED.



CODED NOTES: ○

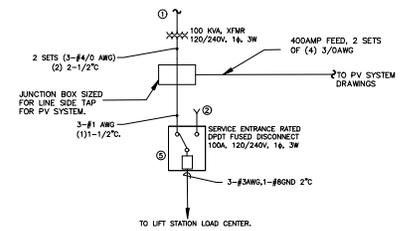
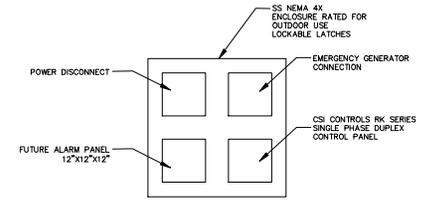
- ① PROVIDE CONNECTION TO SITE DISTRIBUTION POWER SYSTEM.
- ② PROVIDE 200A CAM-LOCK RECEPTS FOR CONNECTION OF PORTABLE GENERATOR. COORDINATE WITH OWNER FOR ACTUAL RECEPTACLE REQUIREMENTS.
- ③ INTERMEDIATE EQUIPMENT FOR SENSORS TO BE FURNISHED BY OTHERS. PROVIDE CONTROL CONNECTIONS AS RECOMMENDED BY THE SUPPLIER.
- ④ SEE WET WELL PLAN FOR FLOAT ELEVATIONS
- ⑤ PROVIDE GROUNDING AND BONDING AT MAIN DISCONNECT PER NEC ARTICLE 250.



- NOTES:
1. COORDINATE EXACT MOUNTING CONFIGURATION, FRAME HEIGHT AND WIDTH WITH COMPONENT SHOP DRAWINGS. PROVIDE SHOP DRAWINGS FOR APPROVAL OF FINAL ARRANGEMENT BY THE ENGINEER.
 2. FASTENING HARDWARE SHALL BE 304 STAINLESS STEEL BOLTS AND STEEL ANGLE IRON AS REQUIRED. ALL ANGLE IRON SHALL BE PRIMED, AND PAINTED WITH GRAY ZINC CHROMATE RUST-RESISTING PAINT.

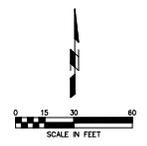
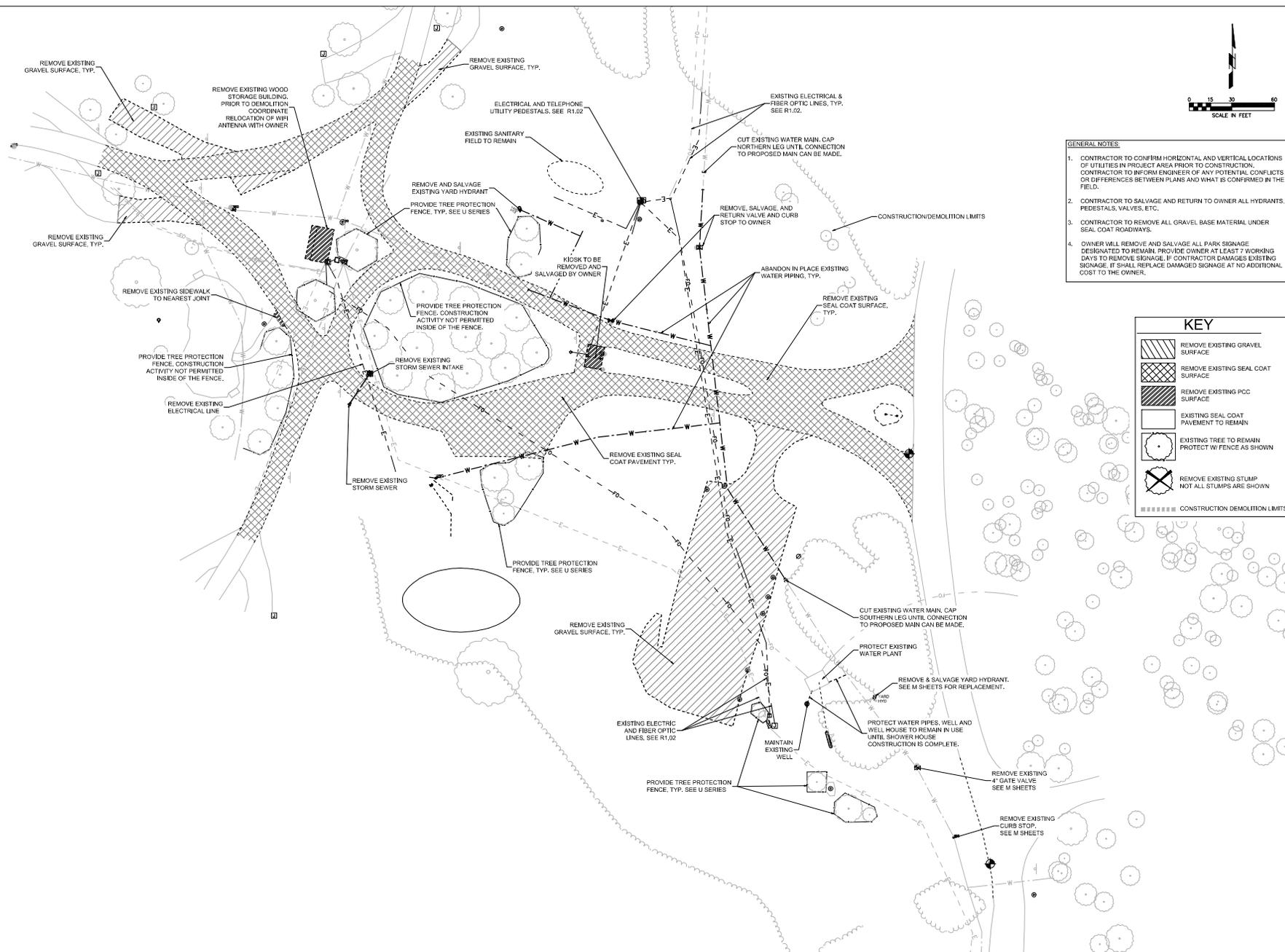
CONTROL PANEL NORTH & SOUTH ELEVATIONS

SCALE: 1/8" = 1'-0"



ONE LINE DIAGRAM

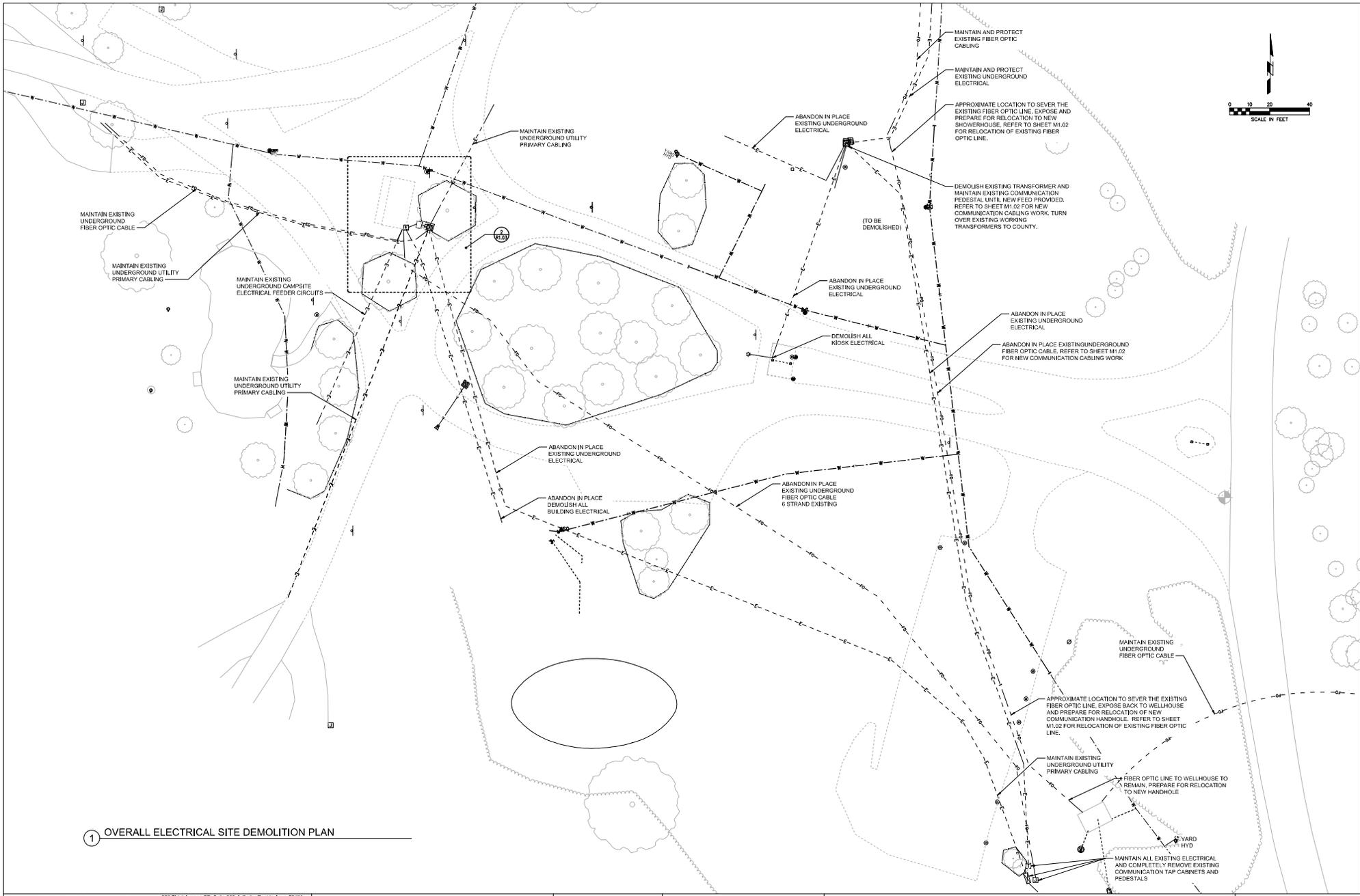
SCALE: NOT TO SCALE



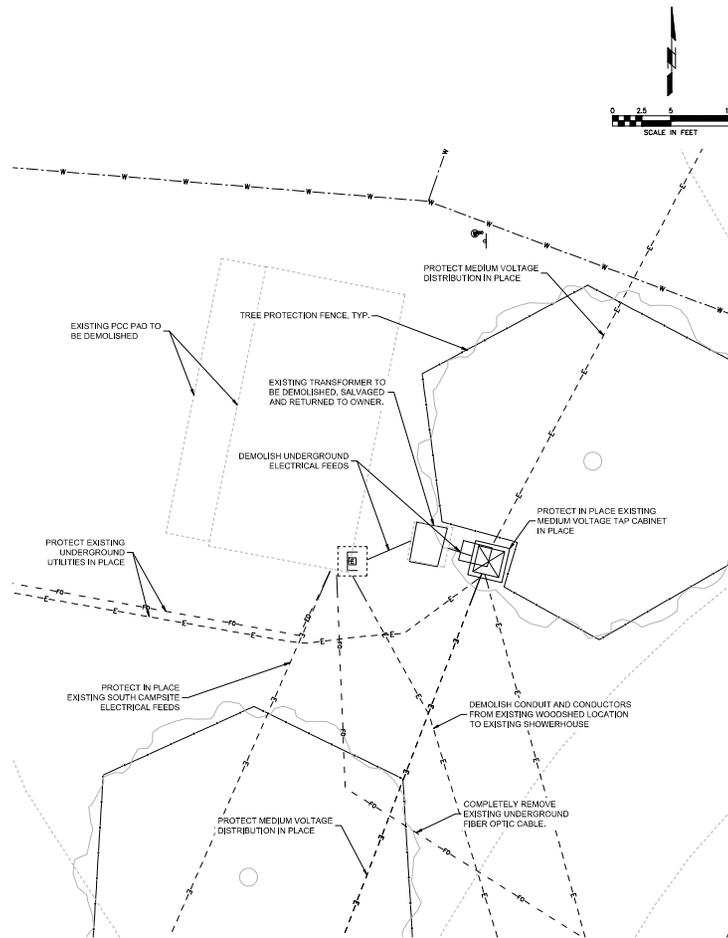
- GENERAL NOTES:**
1. CONTRACTOR TO CONFIRM HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES IN PROJECT AREA PRIOR TO CONSTRUCTION. CONTRACTOR TO INFORM ENGINEER OF ANY POTENTIAL CONFLICTS OR DIFFERENCES BETWEEN PLANS AND WHAT IS CONFIRMED IN THE FIELD.
 2. CONTRACTOR TO SALVAGE AND RETURN TO OWNER ALL HYDRANTS, PEDESTALS, VALVES, ETC.
 3. CONTRACTOR TO REMOVE ALL GRAVEL BASE MATERIAL UNDER SEAL COAT ROADWAYS.
 4. OWNER WILL REMOVE AND SALVAGE ALL PARK SIGNAGE DESIGNATED TO REMAIN. PROVIDE OWNER AT LEAST 7 WORKING DAYS TO REMOVE SIGNAGE. IF CONTRACTOR DAMAGES EXISTING SIGNAGE, IT SHALL REPLACE DAMAGED SIGNAGE AT NO ADDITIONAL COST TO THE OWNER.

KEY

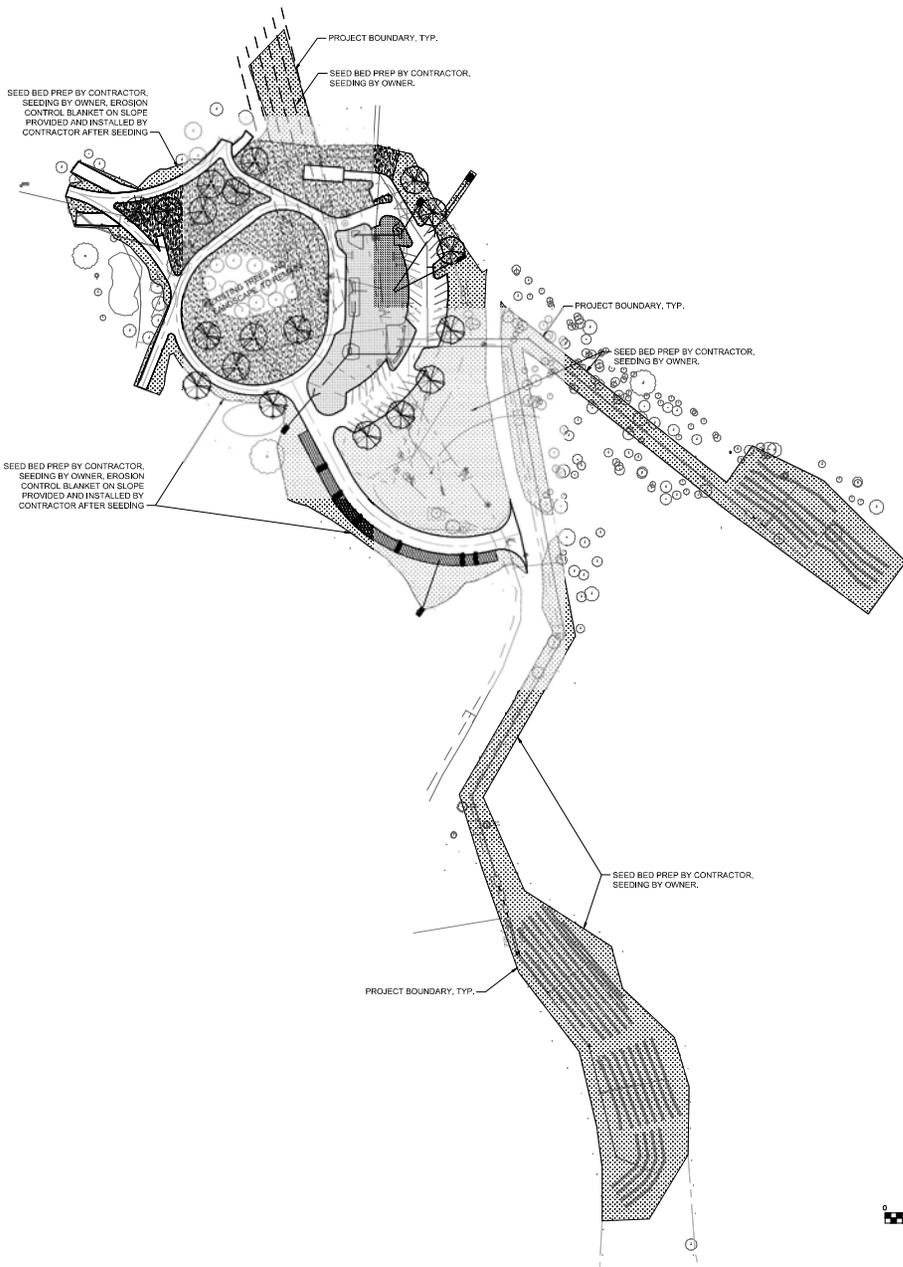
	REMOVE EXISTING GRAVEL SURFACE
	REMOVE EXISTING SEAL COAT SURFACE
	REMOVE EXISTING PCC SURFACE
	EXISTING SEAL COAT PAVEMENT TO REMAIN
	EXISTING TREE TO REMAIN PROTECT W FENCE AS SHOWN
	REMOVE EXISTING STUMP NOT ALL STUMPS ARE SHOWN
	CONSTRUCTION DEMOLITION LIMITS



1 OVERALL ELECTRICAL SITE DEMOLITION PLAN



② ENLARGED ELECTRICAL SITE DEMOLITION PLAN - WOOD SHED



CONTRACTOR PROVIDED

BIO-SWALE SEED MIX

OWNER PROVIDED SEED AND OWNER INSTALLED. CONTRACTOR SHALL PROVIDE SEEDBED PREPARATION, AND EROSION CONTROL BLANKET AFTER SEEDING

ATHLETIC TURF SEED MIX - DARKER APPROVAL REQUIRED CONTRACTOR PROVIDED

HIGH TRAFFIC AREAS SUN OR SHADE LAWN MIX

- 40% BOREAL CHEERFLY RED FESCUE
- 30% PRINCELET TROPICAL CYGRASS
- 20% BRIDGEPORT CHEWINGS FESCUE
- 10% SAREBSTER KENTUCKY BLUEGRASS

SUDAS TYPE 4 SEED

SEE SUDAS SPECIFICATION FOR SEED MIX

OWNER PROVIDED - FOR REFERENCE ONLY

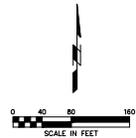
NATIVE GRASSES - OWNER PROVIDED AND SEEDED 193,748 SF

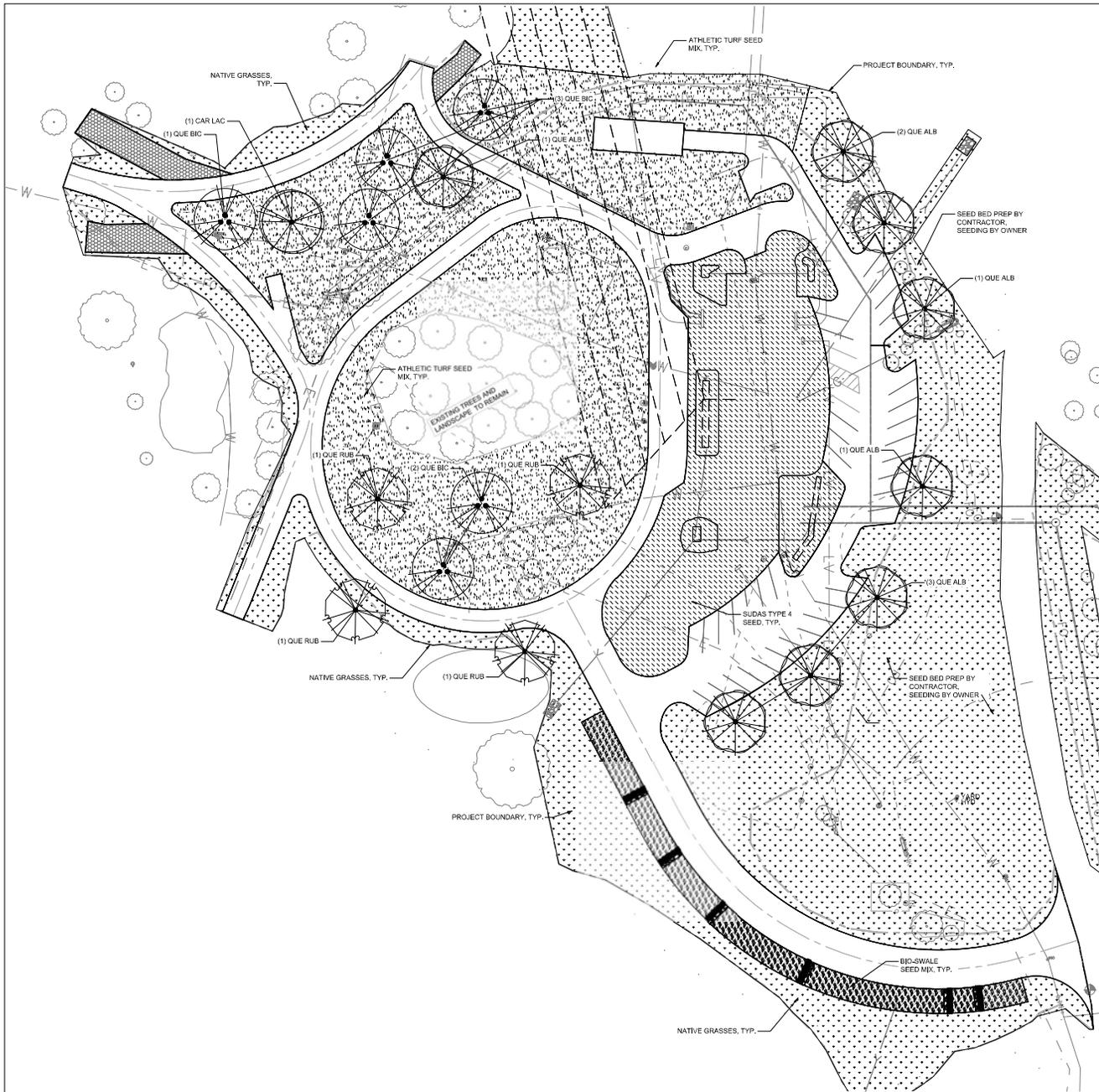
GRASSES

- 30% VIRGINIA WLD RYE
- 30% SILKY WLD RYE
- 20% SIDE OATS GRAMMA
- 10% LITTLE BLUESTEM
- 10% ROUGH DROPSEED

PLANT SCHEDULE: CONTRACTOR PROVIDED AND PLANTED

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE
TREES					
CAR LAC	1	Ulmus laevis	Shelbark Hickory	B & B	2"Cal
QUE ALB	6	Quercus alba	White Oak	B & B	2.5"Cal
QUE BIC	6	Quercus bicolor	Swamp White Oak	B & B	2"Cal
QUE RUB	4	Quercus rubra	Northern Red Oak	B & B	2"Cal
SEED					
ATH TUR	55,922 sf	Athletic Turf Seed Mix	Athletic Turf Seed Mix	SF	
BIO MIX	4,752 sf	Bio-Swale Seed Mix	Bio-Swale Seed Mix	SF	
SUD SEE	22,224 sf	SUDAS Type 4 Seed	SUDAS Type 4 Seed	SF	





PLANTING NOTES

1. CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES PRIOR TO PLANT INSTALLATION. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
2. FIELD ADJUSTMENTS OF PROPOSED PLANT LOCATIONS MAY BE REQUIRED TO MINIMIZE POTENTIAL INTERFERENCE WITH EXISTING UTILITIES. TO MINIMIZE HAZARDS TO PLANT GROWTH AND TO IMPROVE MAINTENANCE CONDITIONS, PLANT LOCATIONS SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO PLANT MATERIAL INSTALLATION.
3. ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANZI 260.1 - LATEST EDITION). PLANTS SHALL BE FRESHLY DUG OR WELL-ESTABLISHED IN CONTAINER AS APPLICABLE. NOT ROOT-BOUND IN THE CONTAINER.
4. NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT THE AUTHORIZATION OF LANDSCAPE ARCHITECT.
5. PLANT QUANTITIES ARE FOR CONTRACTOR'S CONVENIENCE. DRAWINGS SHALL PREVAIL WHERE CONFLICT OCCURS.
6. WOOD MULCH SHALL BE 4" DEEP, COMPOSED OF CEDAR OR CYPRESS WOOD OF UNIFORM COLOR AND LONG FIBROUS NATURE (2-4 INCHES IN LENGTH). DO NOT USE WALNUT. APPLY PRE-EMERGENCE HERBICIDE OVER THE TOP OF ALL WOOD MULCH AREAS.
7. MULCH ALL TREES LOCATED OUTSIDE OF DESIGNATED MULCH BEDS WITH A 4" DEPTH CIRCULAR (3-FOOT DIAMETER FOR SHRUBS AND 6-FOOT DIAMETER FOR TREES) OF WOOD MULCH. MULCHING SHALL BE LIMITED TO PLANTING BEDS AS DESIGNATE ON PLANS OR IN THE IMMEDIATE 3'-6" DIAMETER AT THE BASE OF THE PLANT.
8. OWNER WILL SEED ALL DISTURBED AREAS (OUT TO PROPERTY LINE AND IN RIGHT-OF-WAY AS REQUIRED), OUTSIDE PLANTING BEDS AND PAVEMENT AREAS WITH PERMANENT SEED MIXTURE FOR URBAN AREAS PER DOT SPECIFICATIONS SECTION 2605.036(4) OR APPROVED EQUIVALENT. FOLLOW IDOT AND SEED SUPPLIER'S RECOMMENDATIONS ON SOIL PREPARATION, SEEDING, APPLICATION RATE, MULCHING, WATERING, AND MAINTENANCE.
9. LANDSCAPE CONTRACTOR SHALL MAINTAIN PLANTING BEDS, PLANT MATERIAL, AND NEW TURF AREAS UNTIL SUBSTANTIAL COMPLETION. WEEDING, WATERING, MOWING, AND REPLACEMENT OF DEAD/DYING PLANTS ARE INCLUDED IN THIS MAINTENANCE.
10. ALL EXISTING GROUND COVER SHALL RECEIVE HERBICIDE PRIOR TO INSTALLATION IF OTHER PLANT MATERIAL/ GROUND COVER THAN WHAT IS SHOWN IS EXISTING.
11. LANDSCAPE CONTRACTOR SHALL MAINTAIN TURF AREAS UNTIL SUBSTANTIAL COMPLETION, WEEDING, WATERING, MOWING AND REPLACEMENT OF DEAD/DYING TURF IS INCLUDED IN THIS MAINTENANCE.
12. ALL SEPTIC SYSTEM AND TRENCHES OUTSIDE OF THIS PLAN WILL BE DONE BY CONTRACTOR. OWNER WILL SEED.
13. REFER TO SUDAS STANDARD SPECIFICATIONS FOR SEEDBED PREPARATION.

GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL REVIEW AND FINISH ROUGH GRADING AND EROSION CONTROL MEASURES WITH GENERAL CONTRACTOR AND GRADING CONTRACTOR PRIOR TO COMMENCING LANDSCAPE WORK. GRADING CONTRACTOR SHALL CORRECT DEFICIENCIES IN ROUGH GRADING AND EROSION CONTROL TO A CONDITION ACCEPTABLE TO THE LANDSCAPE CONTRACTOR AND GENERAL CONTRACTOR. COMMENCEMENT OF WORK BY LANDSCAPE CONTRACTOR IMPLIES ACCEPTANCE OF GRADING CONDITIONS AND EROSION CONTROL MEASURES, AND RESPONSIBILITY FOR CONTROL AND REPAIR OF SUBSEQUENT DEFICIENCIES.
2. LANDSCAPE CONTRACTOR IS REQUIRED TO MAINTAIN POSITIVE DRAINAGE ON THE SITE FOLLOWING ACCEPTANCE OF GRADING CONDITIONS. REFER TO GRADING PLAN FOR CONTOURS AND SPOT ELEVATIONS.
3. LANDSCAPE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE ANY CONFLICTS BETWEEN GRADING DESIGN AND ANY ON-SITE UTILITIES. WORK SHALL NOT COMMENCE UNTIL ISSUE IS RESOLVED AND DOCUMENTED IN WRITING BY OWNER'S REPRESENTATIVE.
4. SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES.
5. EXCESS AND WASTE MATERIALS SHALL BE DISPOSED OFF-SITE IN ACCORDANCE WITH APPLICABLE GOVERNMENTAL REGULATIONS.
6. ALL OPEN EXCAVATIONS SHALL BE PROTECTED WITH SAFETY FENCE, BARRIERS, OR BARRICADES IN ACCORDANCE WITH OSHA.
7. MAINTENANCE OF PLANTING ADJACENT TO PUBLIC RIGHT-OF-WAY SHALL BE THE RESPONSIBILITY OF THE OWNER.
8. ALL TREES SHALL BE SINGLE STEM
9. ALL TREES SHALL HAVE STRAIGHT, MAIN LEADING TRUNK AND SHALL BE FREE OF DISEASES.
10. TREE PROTECTION FENCING SHALL BE PLACED EQUAL TO THE DRIPLINE EDGE DURING CONSTRUCTION. ALLOW NO CONSTRUCTION EQUIPMENT OR STORAGE WITHIN THE DRIPLINE DURING CONSTRUCTION.

CONTRACTOR PROVIDED

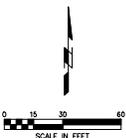
- BIO-SWALE SEED MIX
- ATHLETIC TURF SEED MIX - OWNER APPROVAL REQUIRED CONTRACTOR PROVIDED
- SUDAS TYPE 4 SEED

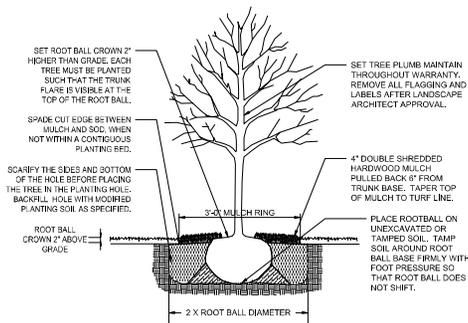
OWNER PROVIDED

- NATIVE GRASSES - OWNER PROVIDED AND SEEDED 192,748 SF
- GRASSES:
 - 30% VIRGINIA WILD RYE
 - 30% SILKY WILD RYE
 - 20% SIDE OATS GRAMA
 - 10% LITTLE BLUESTEM
 - 10% ROUGH DROPSEED

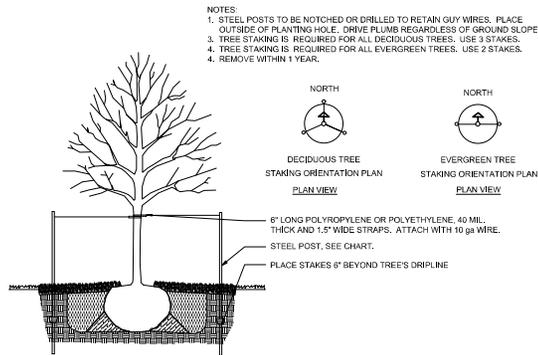
- HIGH TRAFFIC AREAS SUN OR SHADE LAWN MIX
 - 40% BONSAI CREEPING RED FESCUE
 - 20% PROQUETTE II PERENNIAL RYEGRASS
 - 30% BRIDGEPORT CHEWINGS FESCUE
 - 40% BARKRITER KENTUCKY BLUEGRASS

SEE SUDAS SPECIFICATION FOR SEED MIX

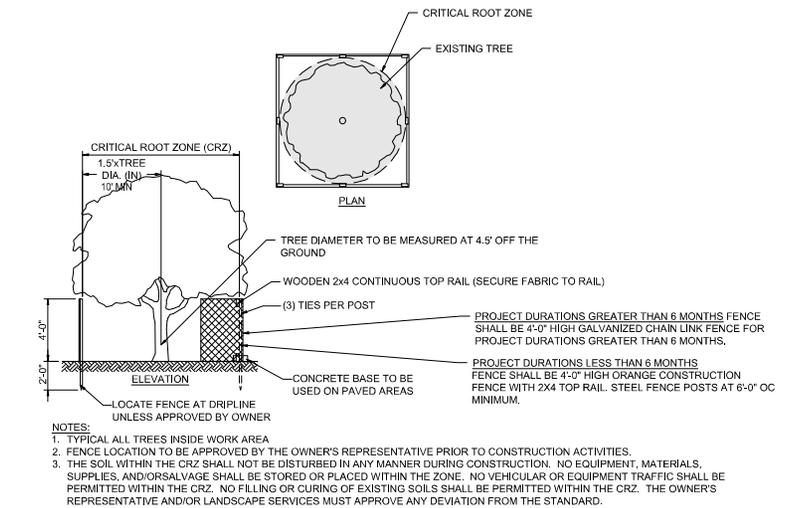




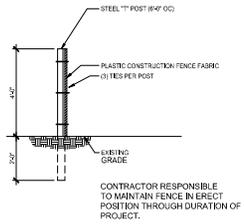
1 DECIDUOUS TREE PLANTING
NTS



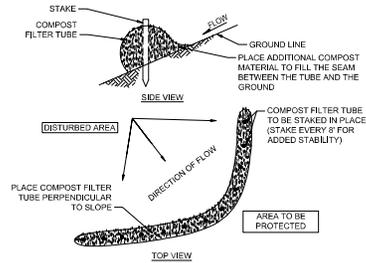
2 TREE STAKING DETAIL
NTS



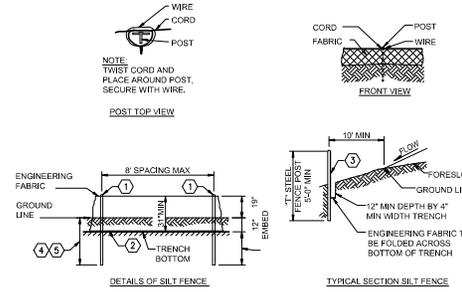
3 TREE PROTECTION DETAIL
NTS



1 CONSTRUCTION FENCE DETAIL
NOT TO SCALE



2 COMPOST FILTER SOCK DETAIL
NOT TO SCALE

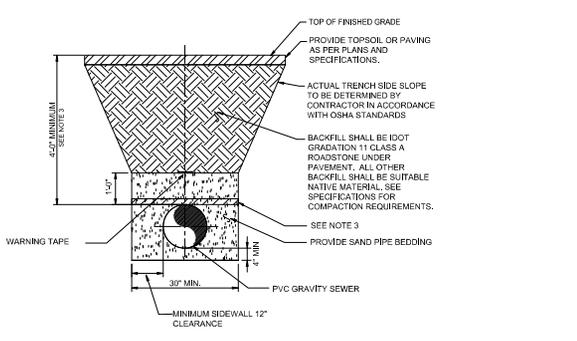


3 SILT FENCE DETAIL
NOT TO SCALE

- GENERAL NOTES**
- 1 SECURE TOP OF ENGINEERING FABRIC TO STEEL POST.
 - 2 ENGINEERING FABRIC TO BE FOLDED ACROSS BOTTOM OF TRENCH.
 - 3 ENGINEERING FABRIC SHALL HAVE A MINIMUM 35' WIDTH.
 - 4 FOR MACHINE INSTALLATION, POSTS SHALL BE EMBEDDED 28" BELOW GROUND LINE. ALL COMPACTION SHALL BE ACCOMPLISHED BY DRIVING OVER EACH SIDE OF SILT FENCE 2-4 TIMES WITH DEVICE EXERTING 60PSI OR GREATER.
 - 5 FOR TRENCH INSTALLATION, POSTS SHALL BE EMBEDDED 28" BELOW THE TRENCH BOTTOM. ALL COMPACTION SHALL BE ACCOMPLISHED WITH A MECHANICAL OR PNEUMATIC TAMPER.

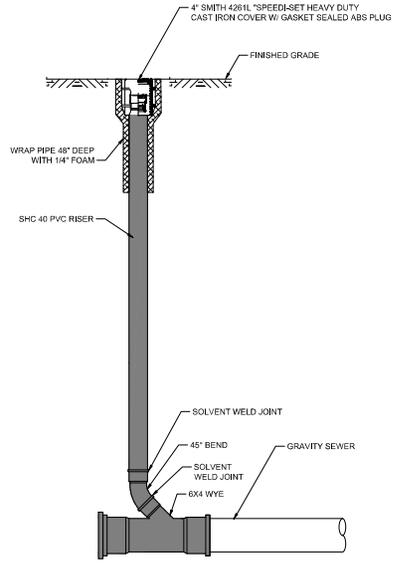


4 STABILIZED CONSTRUCTION ENTRANCE/ CONTRACTOR STAGING AND LAYDOWN AREA
NOT TO SCALE

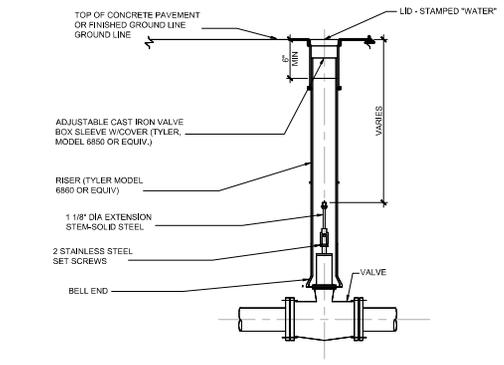


- NOTE:**
1. PIPING DIAMETER AS CALLED OUT ON PLANS. PIPING SHALL BE NORTH AMERICAN SPECIALTY PRODUCTS CERTA-FLO GREENLINE SDR 21 OR EQUAL.
 2. GRAVITY SEWER MAINS SHALL BE SEPARATED FROM WATER MAINS BY A HORIZONTAL DISTANCE OF AT LEAST 10 FEET UNLESS:
 - 1) THE TOP OF A SEWER MAIN IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN, AND,
 - 2) THE SEWER IS PLACED IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH AT A MINIMUM HORIZONTAL SEPARATION OF 3 FEET FROM THE WATER MAIN.
 3. IF LESS THAN 48\"/>

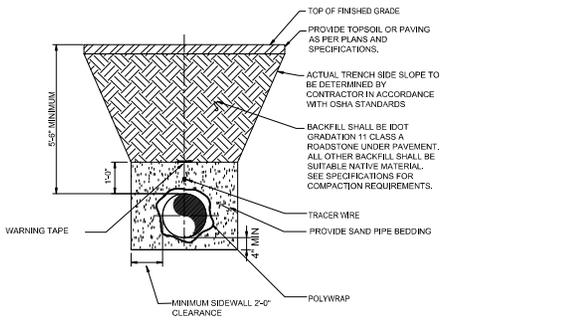
1 TYPICAL GRAVITY SEWER PIPE EMBEDMENT AND INSTALLATION DETAIL
NOT TO SCALE



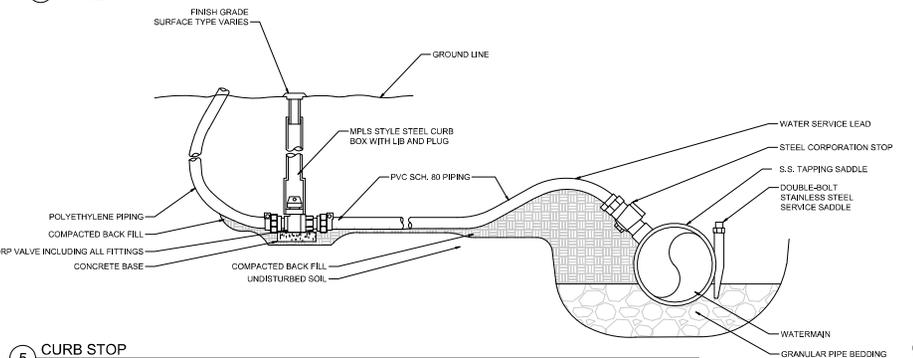
2 CLEANOUT DETAIL
NOT TO SCALE



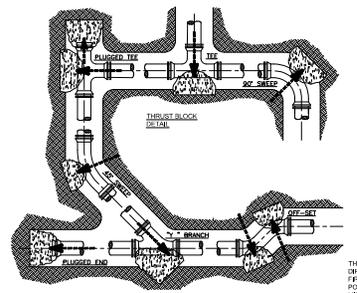
3 VALVE BOX
NOT TO SCALE



4 TYPICAL WATER PIPE EMBEDMENT AND INSTALLATION DETAIL
NOT TO SCALE



5 CURB STOP
NOT TO SCALE

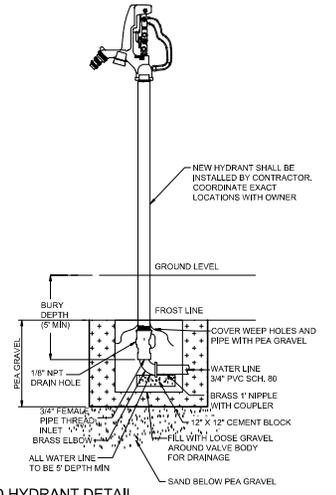


SIZE OF HOLES	90°	45°	22.5°	11.25°
6"	1.4	1.9	1.9	1.9
8"	2.9	4.0	3.7	3.7
10"	4.8	6.8	6.3	6.3
12"	7.3	10.3	9.4	9.4
14"	10.3	14.5	13.4	13.4
16"	13.8	19.3	17.9	17.9
18"	17.8	25.0	23.0	23.0
20"	22.3	31.0	28.5	28.5
24"	28.2	39.5	36.3	36.3
30"	40.2	55.0	50.0	50.0
36"	48.4	66.1	60.3	60.3
42"	57.8	80.0	73.0	73.0
48"	68.5	95.0	86.3	86.3
54"	80.1	112.0	100.0	100.0

THE ABOVE AREAS ARE BASED UPON A SOIL BEARING CAPACITY OF 2000 PSF. IF THE ACTUAL SOIL BEARING CAPACITY IS LESS THAN 2000 PSF, THE THRUST BEARING AREA SHALL BE INCREASED BASED ON THE ACTUAL SOIL BEARING CAPACITY.

6 THRUST BLOCK BEARING AREA (in sq ft)
NOT TO SCALE

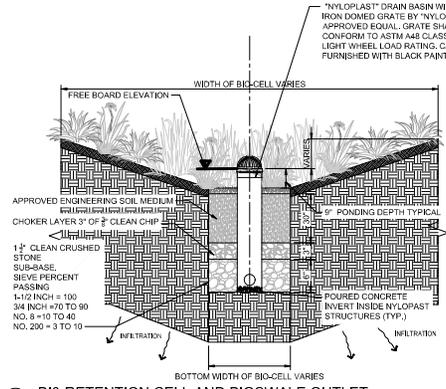
THRUST BLOCKS ARE REQUIRED AT PIPING DIRECTION CHANGES, AT DEAD ENDS, AND AT FIRE HYDRANTS. THRUST BLOCKS SHALL BE POURED-IN-PLACE CONCRETE 2,000 P.S.I. MINIMUM STRENGTH IN A MINIMUM OF 18 INCHES THICK, AND SHALL BE CAST AGAINST A SOLID UNDISTURBED EDGE OF TRENCH FOR BEARING. NO BOLTS, JOINTS OR DRAIN HOLES SHALL COME INTO CONTACT WITH THE CONCRETE THRUST BLOCK AND THE PIPE SHALL BE WRAPPED WITH A PLASTIC SHEET AT THE CONCRETE BEARING SURFACES. THE MINIMUM THICKNESS OF ANY THRUST BLOCK SHALL BE 18 INCHES.



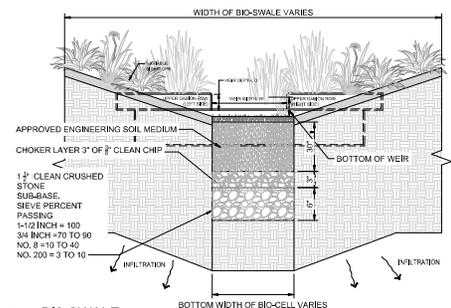
7 YARD HYDRANT DETAIL
NOT TO SCALE

APPROVED ENGINEERING SOIL MEDIUM NOTES:

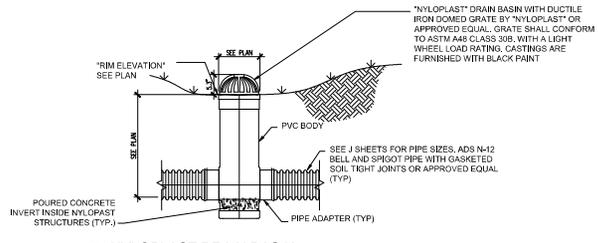
1. THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
2. COMPOST MEDIUM SHALL BE WELL MIXED ON SITE AND SHALL COMPOST TO:
 - A. 85% CONSTRUCTION SAND
 - B. 15% ORGANIC COMPOST
 - C. 10% QUALITY TOPSOIL, W/ LESS THAN 5% MAX. CLAY CONTENT
3. ALL COSTS FOR MATERIALS, DELIVERY TO SITE, AND REQUIRED TEST ANALYSES TO BE PAID FOR BY THE CONTRACTOR.
4. ENGINEERED COMPOST MEDIUM SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER BIOLAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR SUBSTITUTED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVIDE AN OBSTACLE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SHALL BE FREE OF NOXIOUS WEEDS.
5. FINAL ENGINEERED COMPOST MEDIUM SHALL MEET THE FOLLOWING CRITERIA:
 - A. pH RANGE: 5.5-7.0
 - B. ORGANIC MATTER 5-10%
 - C. SOLUBLE SALTS NOT TO EXCEED 500 PPM
 CONTRACTOR SHALL PROVIDE TEST RESULTS FOR MATERIAL FOR APPROVAL.
6. WHEN BACKFILLING THE BIOSWALE CELL, PLACE COMPOST MEDIUM 18" DEEP OR GREATER. DO NOT USE HEAVY EQUIPMENT WITHIN THE CELL. LIGHTWEIGHT EQUIPMENT SHALL BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SANDS.



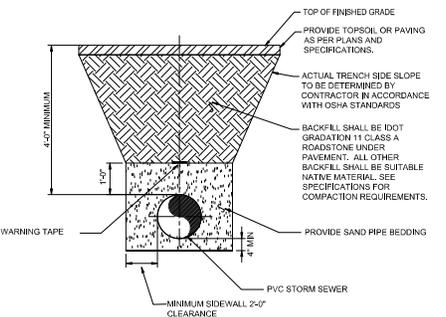
1 BIO-RETENTION CELL AND BIOSWALE OUTLET
NOT TO SCALE



2 BIO-SWALE
NOT TO SCALE

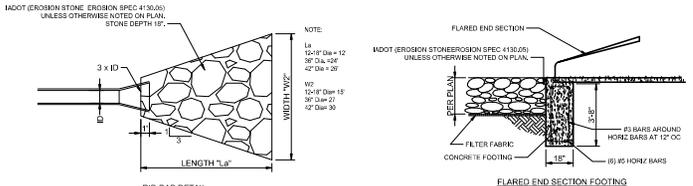


3 NYLOPLAST DRAIN BASIN
NOT TO SCALE

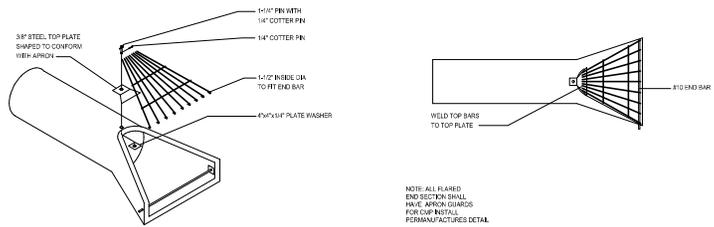


- NOTE:**
1. PIPING DIAMETER AS CALLED OUT ON PLANS. PIPING SHALL BE NORTH AMERICAN SPECIALTY PRODUCTS CERTIFIED TO GREENLINE 500R 21 OR EQUAL.
 2. GRAVITY SEWER MAINS SHALL BE SEPARATED FROM WATER MAINS BY A HORIZONTAL DISTANCE OF AT LEAST 10 FEET UNLESS:
 - 1) THE TOP OF A STORM MAIN IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN, AND
 - 2) THE SEWER IS PLACED IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH AT A MINIMUM HORIZONTAL SEPARATION OF 3 FEET FROM THE WATER MAIN.

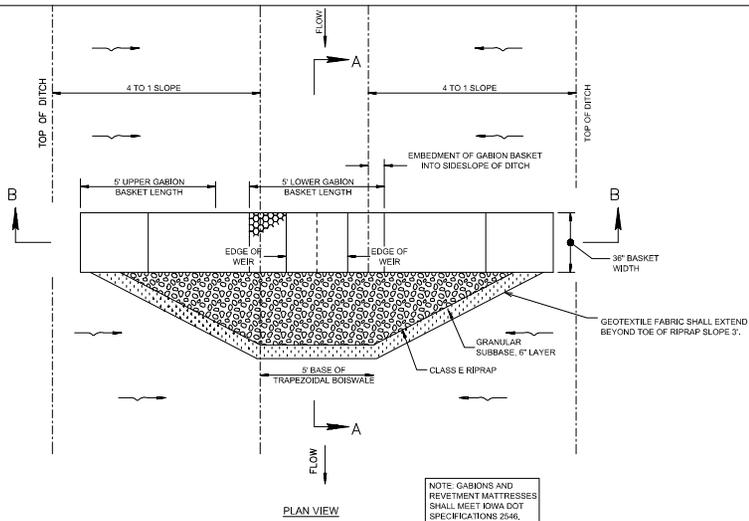
4 TYPICAL GRAVITY STORM PIPE EMBEDMENT AND INSTALLATION DETAIL
NOT TO SCALE



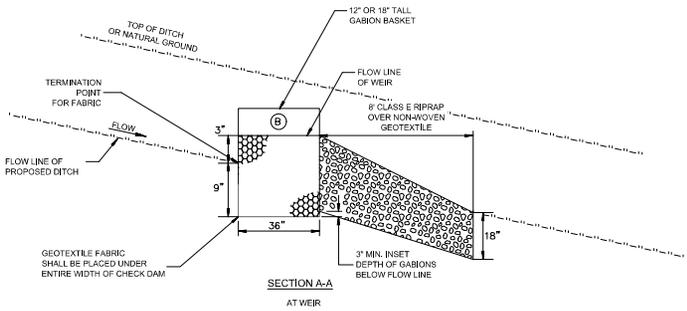
5 RIP RAP AT FLARED END SECTION
NOT TO SCALE



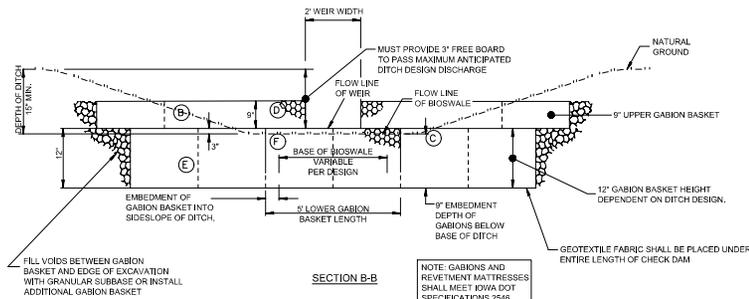
6 FLARED END SECTION APRON GUARD
NOT TO SCALE



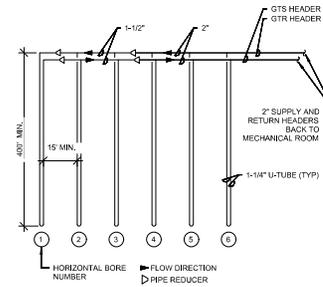
1 CHECKDAM DETAIL PLAN
NOT TO SCALE



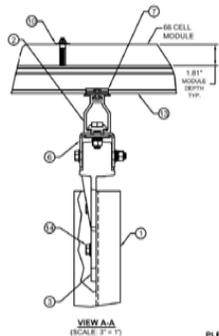
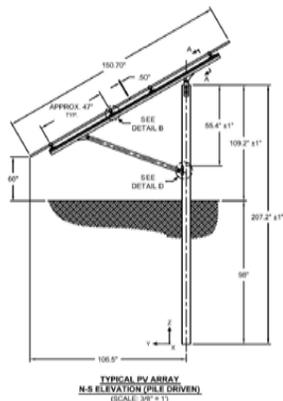
2 CHECK DAM SECTION A-A
NOT TO SCALE



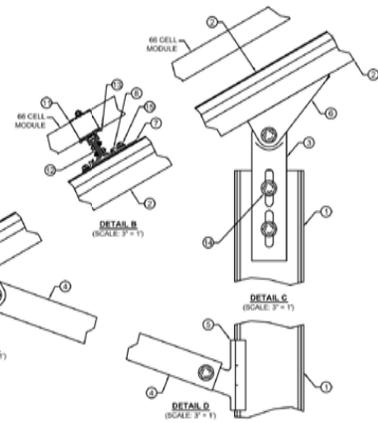
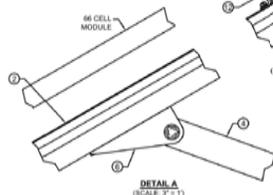
3 CHECK DAM SECTION B-B
NOT TO SCALE



4 HORIZONTAL LOOP/HEADER LAYOUT (GEOTHERMAL SYSTEM)
NOT TO SCALE



PLEASE NOTE:
VIEW A-A SHOWN @ 0° FOR
RACKING CLARITY AND
DETAILS A-D ARE SHOWN @ 30°



BILL OF MATERIALS			
SYM	DESCRIPTION	MATERIAL	FINISH
1	1-BEAM	50# STEEL	HDD
2	STRONGBACK	ALUMINUM	NA
3	STRONGBACK ATTACHMENT	A36 STEEL	HDD
4	STRUT	ALUMINUM	NA
5	STRUT ARM ATTACHMENT	A36 STEEL	HDD
6	SLIDE ATTACHMENT	ALUMINUM	NA
7	RAIL BRACKET	ALUMINUM	NA
8	RAIL CLAMP	ALUMINUM	NA
10	MODULE MID-CLAMP ASSY.	STAINLESS	NA
11	MODULE END-CLAMP ASSY.	STAINLESS	NA
12	SPLICE PLATE	ALUMINUM	NA
13	UD-RAIL	ALUMINUM	NA
14	1/2" - 18x1 1/2"	GRD 5	HDD
15	5/16" HARDWARE	GRD 5	HDD

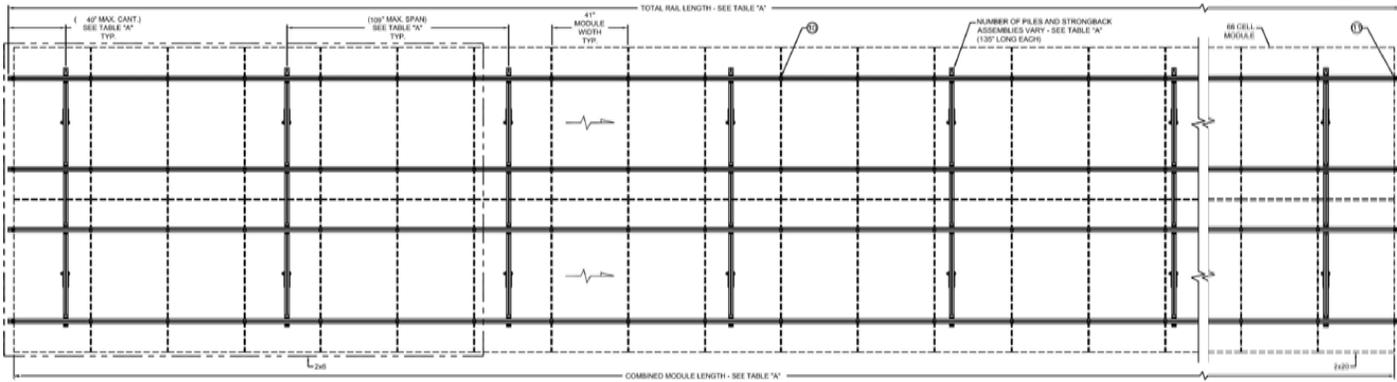


TABLE A - RAIL LENGTHS, MAXIMUM SPAN AND CANTILEVER						DRIVEN PILE		
TABLE	COMBINED MODULE LENGTH	TOTAL RAIL LENGTH	QTY. OF 166' RAIL	QTY. OF 246' RAIL	SPAN	CANTILEVER	QTY. OF PILES	
2x6	236.5"	242.5"	-	4	72"	13.25"	4	
2x7	276"	282"	8	-	66"	9"	5	
2x8	315.5"	321.5"	8	-	70"	20.75"	5	
2x9	355"	361"	4	4	66"	16.5"	6	
2x10	394.5"	400.5"	4	4	72"	20.25"	6	
2x11	434"	440"	-	8	66"	22"	7	
2x12	473.5"	479.5"	-	8	72"	23.75"	7	
2x13	513"	519"	8	4	70"	14.5"	8	

TABLE A - RAIL LENGTHS, MAXIMUM SPAN AND CANTILEVER						DRIVEN PILE		
TABLE	COMBINED MODULE LENGTH	TOTAL RAIL LENGTH	QTY. OF 166' RAIL	QTY. OF 246' RAIL	SPAN	CANTILEVER	QTY. OF PILES	
2x14	552.5"	558.5"	8	4	72"	27.25"	8	
2x15	592"	598"	4	8	72"	11"	9	
2x16	631.5"	637.5"	4	8	66"	21.75"	10	
2x17	671"	677"	-	12	72"	14.5"	10	
2x18	710.5"	716.5"	12	4	66"	18.25"	11	
2x19	750"	756"	8	8	72"	18"	11	
2x20	789.5"	795.5"	8	8	66"	1.75"	12	

NOTE: CONTRACTOR SHALL ADJUST DIMENSIONS OF RACKING SYSTEM TO FIT PV SPACING AS INDICATED IN DETAIL 2 ON DRAWING 21.05 AND EQUIPMENT FOR THE APPROVED PV SYSTEM.

M O D U S

214 EAST FOURTH WATERLOO, IOWA 319 235 0850 TEL 235 0644 FAX
 130 EAST 3RD STREET STE. 515 DES MOINES, IOWA 251 7280 TEL 251 7349 FAX
 115 EAST COLLEGE ST. STE. 319 IOWA CITY, IOWA 319 248 4600 TEL 248 0141 FAX
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