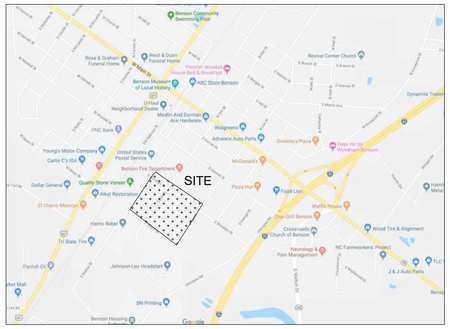
LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

CLIENT REVIEW SET ISSUED: OCTOBER 21, 2019



LOCATION MAP
SCALE: NTS

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TOTAL NUMBER OF DRAWINGS	28

LEGEND

WATER

- EXISTING WATER LINE
- WATERLINE
- EX. VALVE
- PROPOSED WATER VALVE
- POST INDICATOR VALVE (PIV)
- EX. WATER METER
- WATER METER
- EX. FIRE HYDRANT
- FIRE HYDRANT
- REDUCER FITTING
- PLUG FITTING
- WATERLINE TEE
- WATERLINE CROSS
- FIRE DEPARTMENT CONNECTION (FDC)
- WATERLINE BLOWOFF
- EX. WELL CASING

SANITARY SEWER

- EXISTING SANITARY SEWER
- SANITARY SEWER MAIN
- EX. SEWER MANHOLE
- SEWER MANHOLE
- CLEANOUT
- EXISTING CLEANOUT

NATURAL GAS

- EX. GAS LINE
- GAS LINE
- EX. GAS VALVE
- EX. GAS METER

SITE DEVELOPMENT

- EX. STORM SEWER PIPE
- PROPOSED STORM SEWER
- EX. STORM STRUCTURE
- CATCH BASIN
- DROP INLET
- EX. STORM SEWER MANHOLE
- STORM SEWER MANHOLE
- EX. ROOF DRAIN LEADER
- ROOF DRAIN LEADER
- EX. ROOF DRAIN DOWNSPOUT
- ROOF DRAIN DOWNSPOUT
- EX. CURB AND GUTTER
- CURB AND GUTTER
- EXISTING PROPERTY LINE
- PROPERTY LINE
- BENCHMARK AND/OR SURVEY CONTROL MARKER
- SOIL BORING LOCATION
- LIMITS OF DISTURBANCE
- EX. TREE
- EX. SHRUB
- EX. FENCE
- PROPOSED FENCE
- EX. TOPOGRAPHIC CONTOUR
- PROPOSED TOPOGRAPHIC CONTOUR
- PROPOSED SPOT ELEVATION
- EX. SIGN
- SIGN

MISCELLANEOUS UTILITIES

- EX. LIGHT POLE
- EX. LIGHT (WALL PACK)
- PROPOSED LIGHT POLE
- EX. UTILITY POLE
- UTILITY POLE
- EX. GUY WIRE
- EX. ELECTRICAL METER
- EX. OVERHEAD ELECTRIC LINE
- PROPOSED OVERHEAD ELECTRIC LINE
- EX. UNDERGROUND ELECTRIC LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- EX. TELEPHONE PEDESTAL
- TELEPHONE PEDESTAL
- EX. TELEPHONE MANHOLE
- EX. OVERHEAD TELEPHONE LINE
- OVERHEAD TELEPHONE LINE
- EX. OVERHEAD FIBER LINE
- OVERHEAD FIBER LINE
- EX. CABLE PEDESTAL
- EX. OVERHEAD COMMUNICATIONS LINE
- OVERHEAD COMMUNICATIONS LINE
- EX. UNDERGROUND COMMUNICATIONS LINE
- UNDERGROUND COMMUNICATIONS LINE
- EX. OVERHEAD UTILITY LINE-MULTIPLE UTILITIES
- BOLLARD
- PROPERTY MARKER/IRON PIPE
- EX. SURVEY MONUMENT

CIVIL SERIES DRAWING ABBREVIATIONS:

@/-AT	DS-DOWNSPOUT	MECH-MECHANICAL	R/W-RIGHT OF WAY
AC-ACRE	EA-EACH	MH-MANHOLE	REQD-REQUIRED
AFG- ABOVE FINISHED GRADE	EIP-EXISTING IRON PIPE	MIN-MINIMUM	RCP-REINFORCED CONCRETE PIPE
APPR-APPROXIMATE	ELEC-ELECTRICAL	MJ-MECHANICAL JOINT	SAN-SANITARY SEWER
ASSY-ASSEMBLY	E/P-EDGE OF PAVEMENT	NIC-NOT IN CONTRACT	SDWK-SIDEWALK
B/C-BOTTOM OF CURB	EX-EXISTING	OHE-OVERHEAD ELECTRIC	SF-SQUARE FOOT
BOC-BACK OF CURB	F/C-FACE OF CURB	OHP-OVERHEAD POWER	SPT-SPOT GRADE
B/L-BASE LINE	FDC-FIRE DEPARTMENT CONNECTION	OHT-OVERHEAD TELEPHONE	SS-SANITARY SEWER
BM-BOOK OF MAPS	FFE-FINISHED FLOOR ELEVATION	PB-PLAT BOOK	STA-STATION
BMP-BEST MANAGEMENT PRACTICE	FG-FINISHED GRADE	PC-POINT OF CURVATURE	STD-STANDARD
BW-BOTTOM OF WALL	FH-FIRE HYDRANT	PED-PEDESTRIAN	STM-STORM
CB-CATCH BASIN	F/L-FLOW LINE	PG-PAGE	STMH-STORM SEWER MANHOLE
C&G-CURB AND GUTTER	FM-FORCE MAIN	PH-PHASE	SWM-STORMWATER MANAGEMENT
C/L-CENTERLINE	FT-FOOT	PI-POINT OF INTERSECTION	T-TELEPHONE
CL-CLASS	G-GAS	PIV-POST INDICATOR VALVE	T/C-TOP OF CURB
CMP-CORRUGATED METAL PIPE	GND-GROUND	PKG-PARKING	TCM-TELEPHONE MANHOLE
CO-CLEANOUT	GV-GATE VALVE	P/L-PROPERTY LINE	TS&V-TAPPING SLEEVE AND VALVE
COMM-COMMUNICATIONS	HDPE-HIGH DENSITY POLYETHYLENE	PS-PUMP STATION	UGE-UNDERGROUND ELECTRIC
CONC-CONCRETE	HORIZ-HORIZONTAL	PT-POINT OF TANGENCY	UNK-UNKNOWN
CONN-CONNECTION	IN-INCHES	PP-POWER POLE	UP-UTILITY POLE
CY-CUBIC YARD	INV-INVERT	PVC-POLYVINYL CHLORIDE	VAR-VARIABLE
DB-DEED BOOK	IP-IRON PIPE	PVMT-PAVEMENT	VERT-VERTICAL
DCV-DOUBLE CHECK VALVE	IPS-IRON PIPE SET	PWR-POWER	W/-WITH
DDCV-DOUBLE DECTECTOR CHECK VALVE	L-LENGTH	R-RADIUS	WM-WATER METER
DI-DROP INLET	LF-LINEAR FOOT	RD-ROOF DRAIN	W/O-WITHOUT
DIP-DUCTILE IRON PIPE	LP-LIGHT POLE	RJ-RESTRAINTED JOINT	W/L-WATERLINE
DR-DRIVEWAY	LS-LIFT STATION	RPZ-REDUCED PRESSURE ZONE	WSEL-WATER SERVICE ELEVATION
			WV-WATER VALVE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM Z. SHIPMAN
5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING

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DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

COVER SHEET

SHEET NUMBER:
C-00

THESE PLANS AND ASSOCIATED DOCUMENTS ARE THE EXCLUSIVE PROPERTY OF SHIPMAN ENGINEERING, PLLC AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART. THESE DOCUMENTS SHALL NOT BE USED FOR ANY PURPOSE INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION, BIDDING AND OBTAINING PERMITS WITHOUT THE EXPRESS WRITTEN CONSENT OF SHIPMAN ENGINEERING, PLLC.

DEMOLITION SEQUENCE:

1. INSTALL TREE PROTECTION FENCING AS SHOWN TO PROTECT TREES THAT WILL REMAIN IN PLACE.
2. INSTALL THE NECESSARY EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. REMOVE AND/OR DEMOLISH EXISTING STRUCTURES, OVERHEAD POWER AND OTHER UTILITIES AS SHOWN ON THE PLAN. COORDINATE WITH DUKE ENERGY/PROGRESS AND OTHER APPLICABLE UTILITIES PRIOR TO REMOVAL.
4. REMOVE EXISTING TREES THAT ARE APPROVED FOR REMOVAL.
5. REMOVE CONCRETE SIDEWALK, ASPHALT, FEATURES AS SHOWN. DEMOLISH THE EXISTING STRUCTURE AS SHOWN.
8. REMOVE EXISTING ROOT MAT, TOPSOIL, AND OTHER ORGANIC MATERIALS FROM THE CONSTRUCTION AREA AS REQUIRED.
9. REMOVE ANY ADDITIONAL EXISTING FEATURES AS SHOWN ON THIS PLAN.

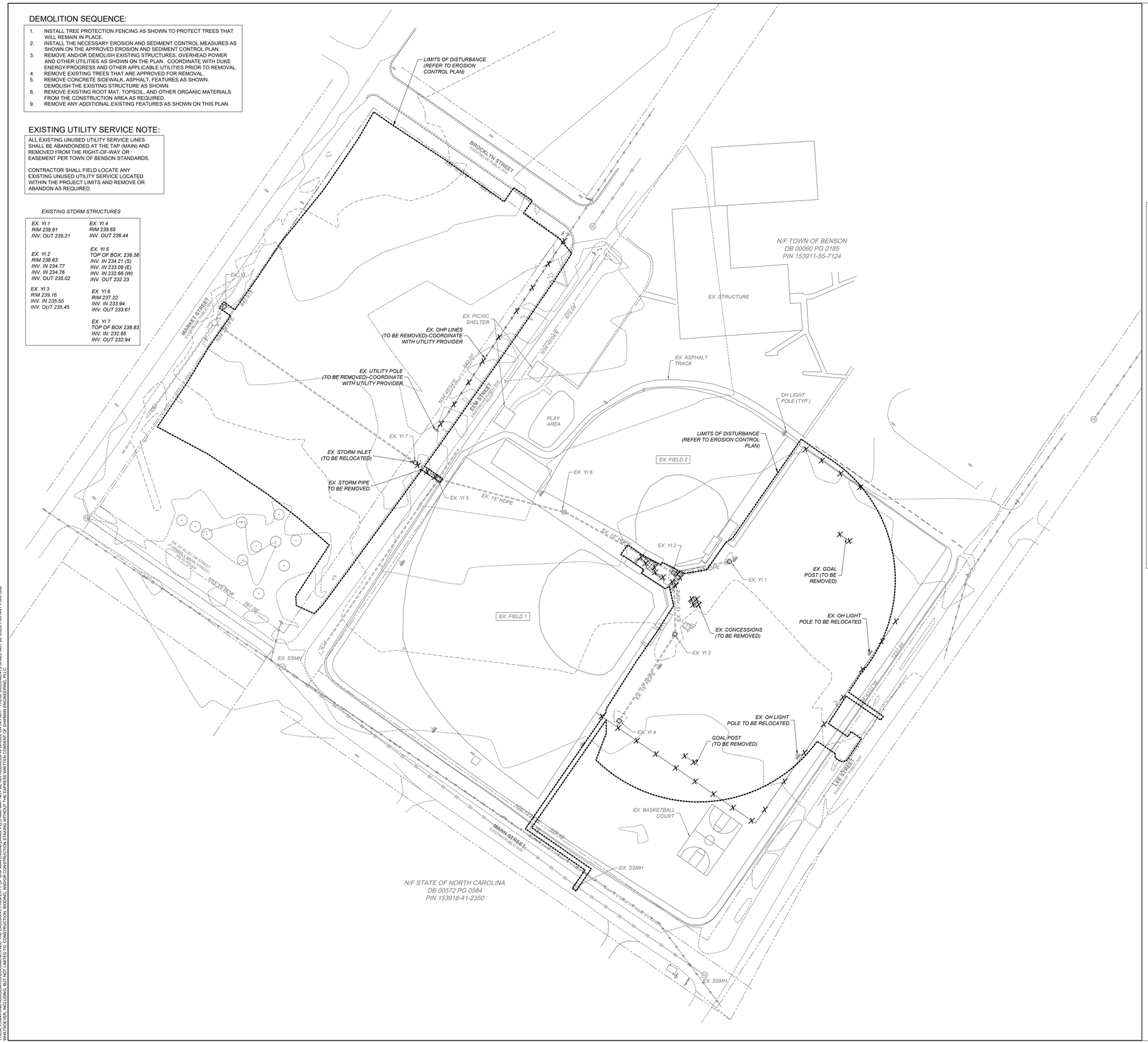
EXISTING UTILITY SERVICE NOTE:

ALL EXISTING UNUSED UTILITY SERVICE LINES SHALL BE ABANDONDED AT THE TAP (MAIN) AND REMOVED FROM THE RIGHT-OF-WAY OR EASEMENT PER TOWN OF BENSON STANDARDS.

CONTRACTOR SHALL FIELD LOCATE ANY EXISTING UNUSED UTILITY SERVICE LOCATED WITHIN THE PROJECT LIMITS AND REMOVE OR ABANDON AS REQUIRED.

EXISTING STORM STRUCTURES

EX. YI 1 *RIM 238.81* *INV. OUT 235.21*	*EX. YI 4* *RIM 239.65* *INV. OUT 236.44*
EX. YI 2 *RIM 238.63* *INV. IN 234.77* *INV. IN 234.76* *INV. OUT 235.02*	*EX. YI 5* *TOP OF BOX: 238.58* *INV. IN 234.21 (S)* *INV. IN 233.09 (E)* *INV. IN 232.66 (W)* *INV. OUT 232.23*
EX. YI 3 *RIM 239.16* *INV. IN 235.55* *INV. OUT 235.45*	*EX. YI 6* *RIM 237.22* *INV. IN 233.94* *INV. OUT 233.61*
	EX. YI 7 *TOP OF BOX 238.83* *INV. IN: 232.85* *INV. OUT 232.94*



GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.

2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.

3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.

4. AREAS COMPUTED BY THE COORDINATE METHOD.

5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.

6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.

7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800OK DATED OCTOBER 3, 2006.

8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.

9. NO INVESTIGATION HAS BEEN PERFORMED AS TO THE PRESENCE OF WETLANDS, STREAMS, SURFACE WATERS, RIPARIAN BUFFERS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS.

DEMOLITION NOTES:

1. REMOVE/DEMOLISH/ABANDON EXISTING FEATURES AFTER EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND AFTER THE APPROVAL OF THE ENGINEER.
2. DO NOT INTERRUPT EXISTING UTILITY SERVICES FOR FACILITIES OCCUPIED BY THE OWNER OR OTHERS EXCEPT WHEN PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE ACCEPTABLE TEMPORARY UTILITY SERVICES.
   a. NOTIFY ENGINEER NOT LESS THAN 72 HOURS IN ADVANCE OF PROPOSED UTILITY SERVICE INTERRUPTIONS.
   b. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT RECEIVING WRITTEN PERMISSION FROM THE DESIGN ENGINEER.
3. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER IN THE EVENT THAT UNANTICIPATED HAZARDOUS MATERIALS ARE ENCOUNTERED. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND REGULATIONS REGARDING THE HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS.
4. SUBSURFACE UTILITIES AND FEATURES DENOTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE IN NATURE AND HAVE BEEN LOCATED TO THE EXTENT POSSIBLE VIA LEVEL "B" SUE METHODS ALONG THE PUBLIC RIGHT-OF-WAYS OF WEST STREET ONLY. CONTRACTOR IS RESPONSIBLE FOR SUBSURFACE UTILITY EXPLORATION, INCLUDING UTILITY "POTHOLING" OR BY THE EXCAVATION OF TEST PITS AS NECESSARY TO DETERMINE THE UTILITY LOCATION, DEPTHS, AND MATERIALS.
5. VERIFY LOCATIONS AND SIZES OF ALL EXISTING FEATURES PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DOCUMENTATION OF EXISTING FEATURES THROUGH THE USE OF PHOTOGRAPHY, VIDEO, OR OTHER RECORDS PRIOR TO DISTURBANCE ON SITE.
6. LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND REPAIR ANY DAMAGES TO EXISTING UTILITIES RESULTING FROM CONSTRUCTION.
7. REMOVE ALL EXISTING ON-SITE TRASH AND DEBRIS. TRASH SHALL BE REMOVED AND DISPOSED OF IN A LEGAL MANNER. NOTIFY OWNER AND ENGINEER IF ANY HAZARDOUS MATERIALS (ASBESTOS, LEAD PAINT, ETC.) ARE ENCOUNTERED.
8. REMOVE SIDEWALK, CURB AND GUTTER, AND OTHER CONCRETE SECTIONS BY SAWCUTTING THE NEAREST CONTROL JOINT AWAY FROM THE AREA DESIGNATED TO BE REMOVED ON THE DEMOLITION PLAN.
9. SAWCUT PAVEMENT IN ALL LOCATIONS WHERE ABUTTING SIDEWALK OR NEW PAVEMENT IS EXISTING.
10. NOTIFY AND COORDINATE ANY REQUIRED RELOCATION AND/OR REMOVAL OF EXISTING UNDERGROUND UTILITIES, POLES, METERS, OR OTHER ABOVE GROUND APPURTENANCES WITH THE APPROPRIATE UTILITY PROVIDER (I.E. POWER, TELEPHONE, CABLE, AND NATURAL GAS/PROPANE) PRIOR TO THE START OF SELECTIVE DEMOLITION WORK.
11. ARRANGE SELECTIVE DEMOLITION SCHEDULE SO AS NOT TO INTERVENE WITH OWNER'S USE OF THE PROPERTY.
12. SHOULD UNCHARTED OR INCORRECTLY CHARTED EXISTING UTILITIES BE IDENTIFIED, CONTACT THE ENGINEER IMMEDIATELY FOR INSTRUCTIONS. PROVIDE A SCALED DRAWING OF THE UNCHARTED OR INCORRECTLY CHARTED UTILITY FOR USE BY THE ENGINEER IN PREPARING ADDITIONAL DIRECTIONS.
13. CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE, FREE OF DEBRIS, TRASH, OR OTHER CONSTRUCTION MATERIALS. AREAS SUBJECT TO SITE CONSTRUCTION ADJACENT TO THE PUBLIC RIGHT OF WAY AND PEDESTRIAN SIDEWALKS SHALL BE LEFT "BROOM CLEAN" AT THE END OF EACH WORK DAY.
14. REMOVE ALL ITEMS SHOWN ON EXISTING CONDITIONS PLAN AS NEEDED FOR THE INSTALLATION OF NEW WORK AND/OR INFRASTRUCTURE.
15. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL THE TREE PROTECTION AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.

DEMOLITION LEGEND

X	ITEM TO BE DEMOLISHED OR REMOVED
	AREA TO BE DEMOLISHED
	DEMOLITION LIMITS

EXISTING CONDITIONS LEGEND

	LIGHT POLE
293.47	EX. SPOT GRADE
	UTILITY POLE
CO	SANITARY SEWER CLEANOUT
S	SANITARY SEWER MANHOLE
WM	WATER METER
	SIGN
	PROPERTY LINE
	SETBACK LINE
	EASEMENT LINE
	FENCE LINE
SS	SANITARY SEWER LINE
W	WATER MAIN
G	NATURAL GAS MAIN
T	TELEPHONE LINE
U	MARKED UTLITY LINE
181	MINOR TOPOGRAPHICAL CONTOUR
185	MAJOR TOPOGRAPHICAL CONTOUR

Know what's below. Call before you dig.

SCALE: 1 IN = 60 FT

60' 30' 0 60' 120'

SCALE IN FEET HORIZONTAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN

5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING

SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY:	WZS
DRAWN BY:	WZS
CHECKED BY:	WZS
DRAWING DATE:	07-11-19
SE PROJECT #:	2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

EXISTING CONDITIONS & DEMO PLAN

SHEET NUMBER:
C-01

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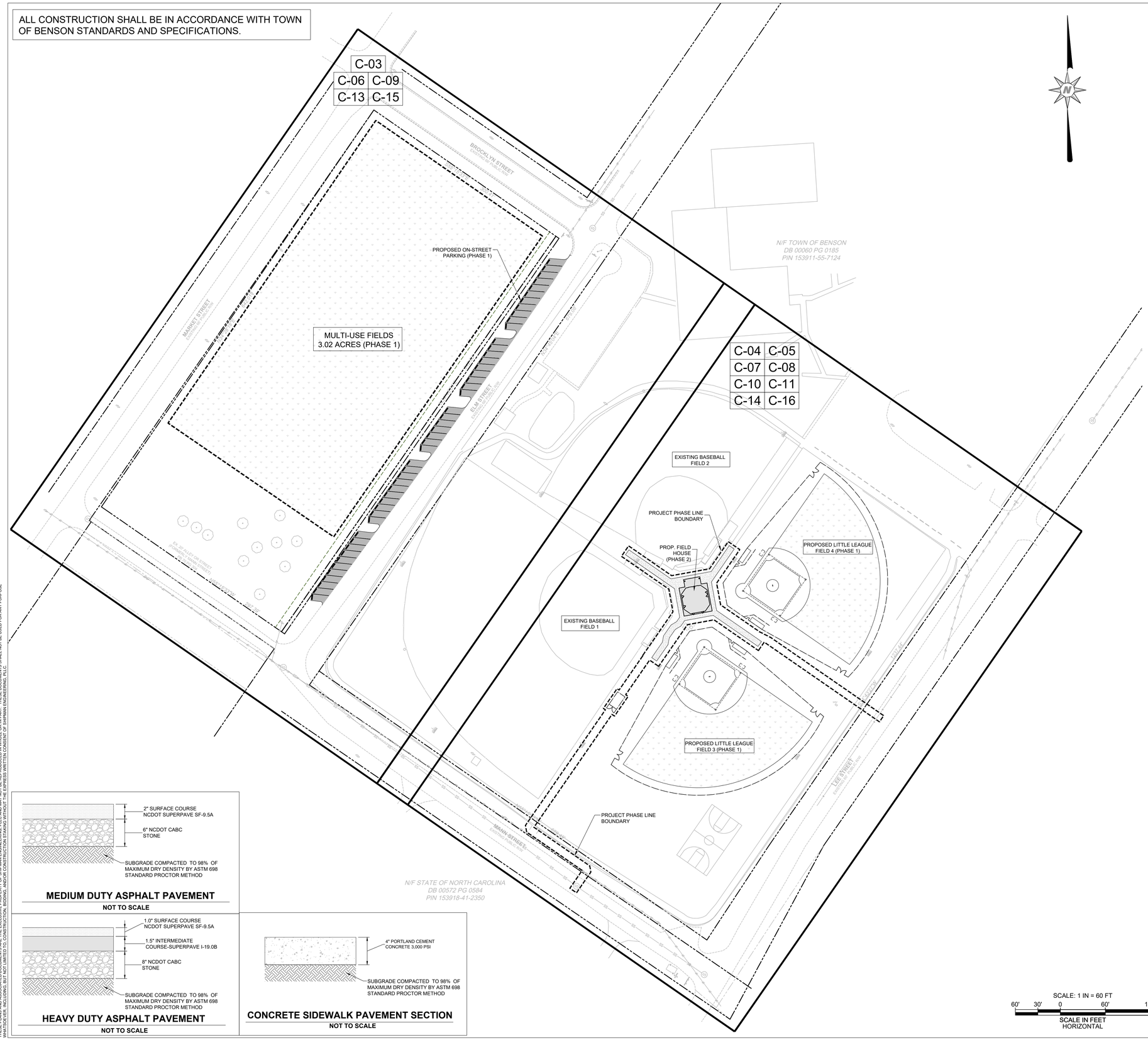
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.



GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.
2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.
3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.
4. AREAS COMPUTED BY THE COORDINATE METHOD.
5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.
6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.
7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800K DATED OCTOBER 3, 2006.
8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.
9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.
10. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.
11. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.
12. CONTRACTOR IS RESPONSIBLE FOR VERIFIYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.
13. MAXIMUM SIDEWALK CROSS SLOPE IS 2% (1/4 INCH PER FOOT).
14. NO INVESTIGATION HAS BEEN PERFORMED AS TO THE PRESENCE OF WETLANDS, STREAMS, SURFACE WATERS, RIPARIAN BUFFERS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS.

IMPORTANT SIGHT TRIANGLE NOTE: WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN TWO (2) AND EIGHT (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY, IF NO CURBING EXISTS.

SITE DATA TABLE

PHYSICAL ADDRESS:	0 MARKET STREET 310 S. LEE STREET
JOHNSTON CO. PIN:	153918-42-2201 153918-41-6945
PROPERTY AREA:	4.59 ACRES (0 MARKET ST.) 18.46 ACRES (310 S. LEE ST.) 23.05 ACRES TOTAL
PROJECT AREA:	6.86 ACRES +/-
PROPOSED USE:	PARK/OPEN SPACE OUTDOOR RECREATION
ZONING DISTRICT:	RA (0 MARKET ST.) & B-2 (310 S. LEE ST.)
OVERLAY DISTRICT:	NONE
MAXIMUM BLDG HEIGHT:	35 FEET
MAXIMUM BLDG COVERAGE:	35% (RA DISTRICT) & 50% (B-2 DISTRICT)
MAXIMUM IMPERVIOUS AREA:	50% (RA DISTRICT) & 75% (B-2 DISTRICT)
PERIMETER YARDS & SETBACKS:	RA DISTRICT (NON RESIDENTIAL USE):
	STREET: 35 FEET
	SIDE YARD (INTERIOR): 15 FEET
	SIDE YARD (TOTAL): 30 FEET
	SIDE YARD (STREET): 25 FEET
	REAR: 30 FEET
	B-2 DISTRICT:
	STREET YARD (MIN.): NONE
	STREET YARD (MAX.): 10 FEET
	SIDE YARD (INTERIOR): 30 FEET
	SIDE YARD (STREET): 30 FEET
	REAR: 20 FEET
PARKING REQUIREMENT, PER UDO:	AS DIRECTED BY THE PLANNING DIRECTOR
PARKING PROVIDED:	48 PROPOSED SPACES

PAVEMENT LEGEND

- MEDIUM DUTY ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PATCH
- CONCRETE SIDEWALK
- TURF ATHLETIC & PLAY FIELDS

SITE PLAN LEGEND

- STREET LIGHT
- SIGN
- WHEELCHAIR RAMP (WCR)
- CLUSTER MAILBOX UNIT (CBU)
- ROADWAY CENTER LINE
- LOT LINE
- RIGHT OF WAY LINE
- RETAINING WALL
- SETBACK LINE
- BMP LIMITS
- EASEMENT
- STANDARD CURB & GUTTER
- SPILL CURB & GUTTER
- ORNAMENTAL FENCE
- FENCE
- OPEN SPACE AREA

MEDIUM DUTY ASPHALT PAVEMENT

NOT TO SCALE

HEAVY DUTY ASPHALT PAVEMENT

NOT TO SCALE

CONCRETE SIDEWALK PAVEMENT SECTION

NOT TO SCALE

SCALE: 1 IN = 60 FT

60' 30' 0 60' 120'

SCALE IN FEET HORIZONTAL

811 Know what's below. Call before you dig.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM Z. SHIPMAN 5/8/2020

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

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LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

OVERALL SITE LAYOUT

SHEET NUMBER:

C-02

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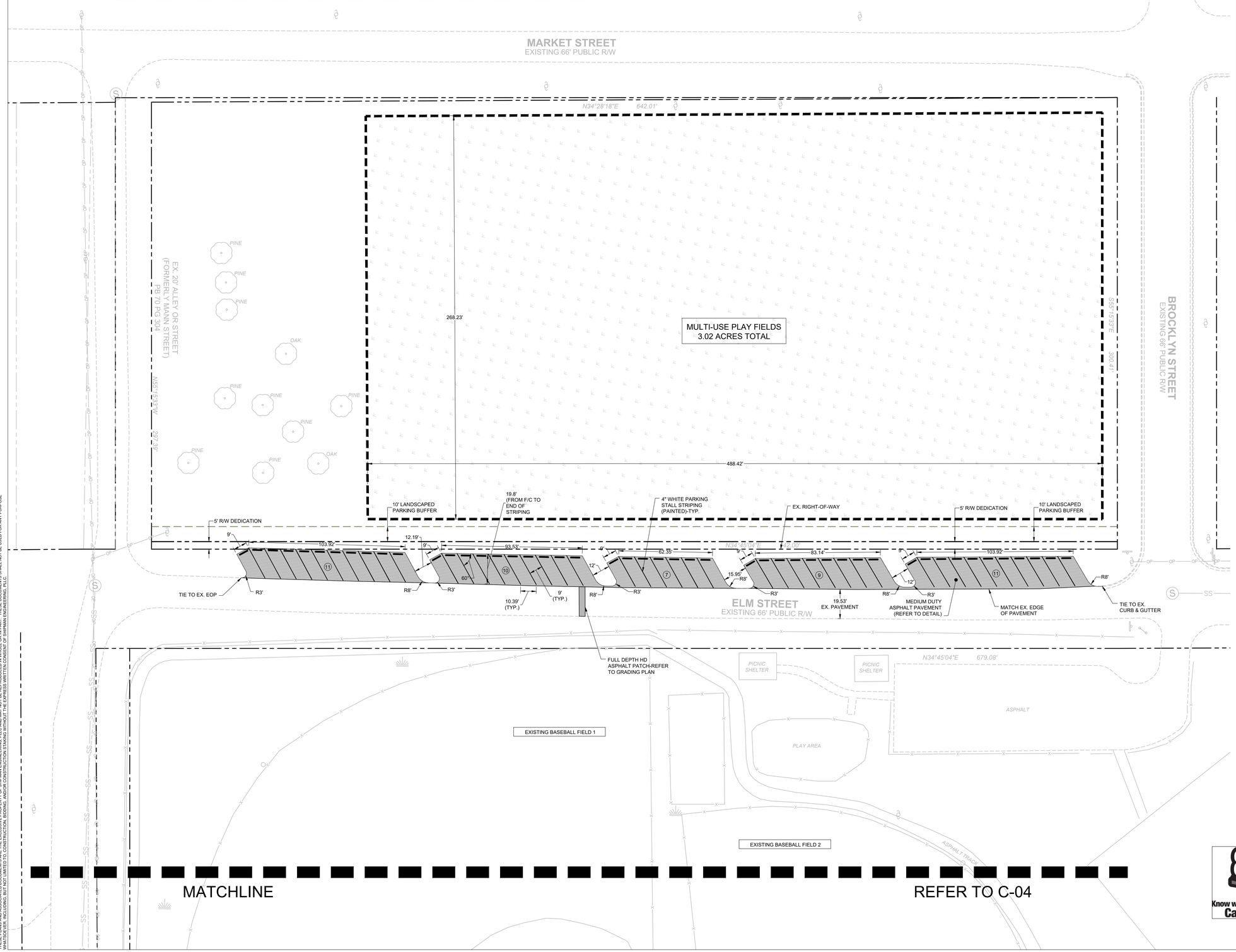
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

IMPORTANT SIGHT TRIANGLE NOTE: WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN TWO (2) AND EIGHT (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY, IF NO CURBING EXISTS.



GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.

2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.

3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.

4. AREAS COMPUTED BY THE COORDINATE METHOD.

5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.

6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.

7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800K DATED OCTOBER 3, 2006.

8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.

9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.

10. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.

11. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.

12. CONTRACTOR IS RESPONSIBLE FOR VERIFIYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.

13. MAXIMUM SIDEWALK CROSS SLOPE IS 2% (1/4 INCH PER FOOT).

14. NO INVESTIGATION HAS BEEN PERFORMED AS TO THE PRESENCE OF WETLANDS, STREAMS, SURFACE WATERS, RIPARIAN BUFFERS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS.

PAVEMENT LEGEND

- MEDIUM DUTY ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PATCH
- CONCRETE SIDEWALK
- TURF ATHLETIC & PLAY FIELDS

SITE PLAN LEGEND

- STREET LIGHT
- SIGN
- WCR — WHEELCHAIR RAMP
- CBU — CLUSTER MAILBOX UNIT
- ROADWAY CENTER LINE
- LOT LINE
- RIGHT OF WAY LINE
- RETAINING WALL
- SETBACK LINE
- BMP LIMITS
- EASEMENT
- STANDARD CURB & GUTTER
- SPILL CURB & GUTTER
- ORNAMENTAL FENCE
- FENCE
- OPEN SPACE AREA

Know what's below. Call before you dig.

SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

NORTH CAROLINA 035027 ENGINEER WILLIAM E. SHIPMAN

5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING

SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY:	WZS
DRAWN BY:	WZS
CHECKED BY:	WZS
DRAWING DATE:	07-11-19
SE PROJECT #:	2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE LAYOUT PLAN I-PHASE 1

SHEET NUMBER:
C-03

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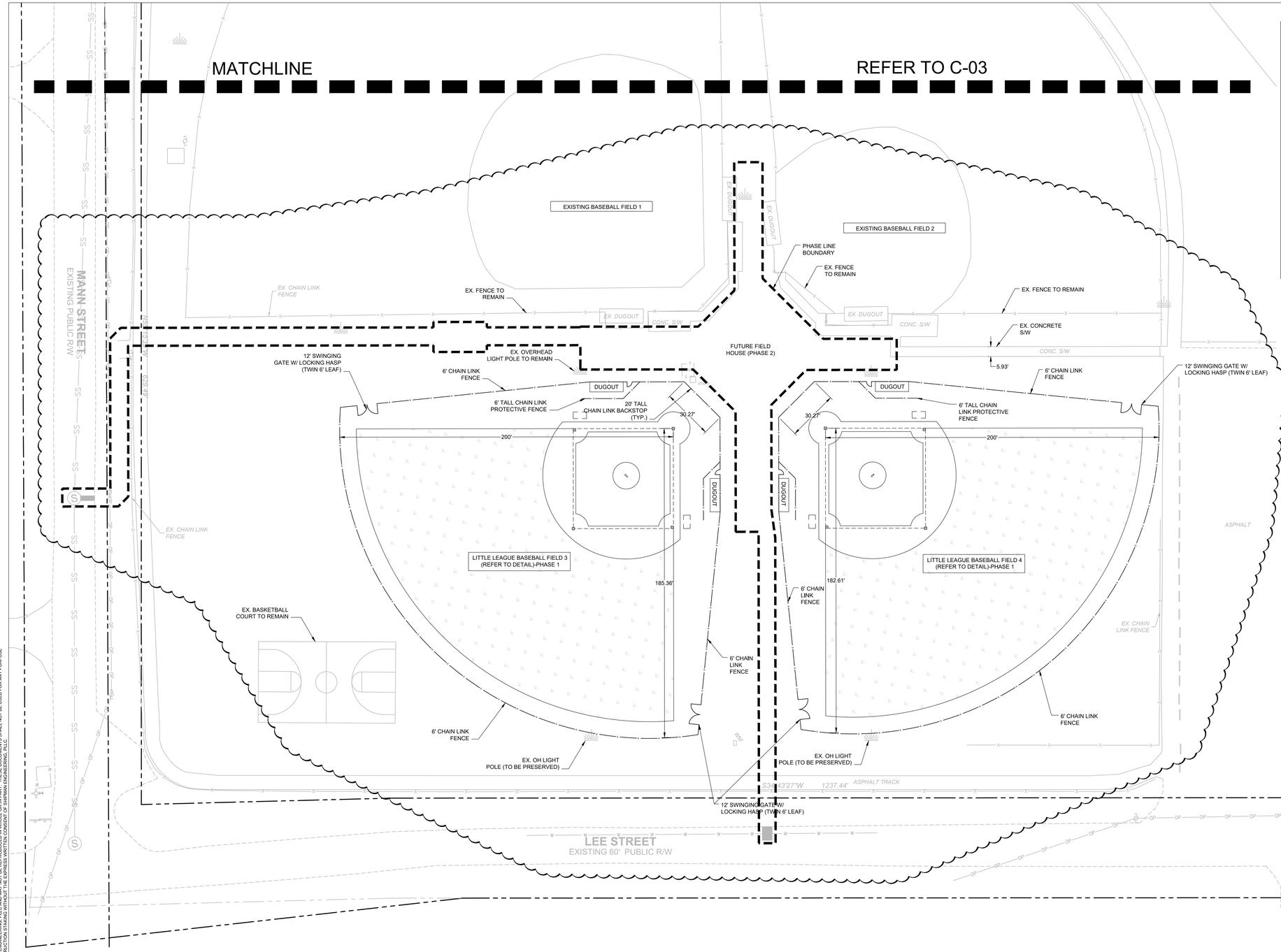

GENERAL NOTES:

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2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.
3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.
4. AREAS COMPUTED BY THE COORDINATE METHOD.
5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.
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10. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.
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30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

811 Know what's below. Call before you dig.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN 5/8/2020

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE LAYOUT PLAN II-PHASE 1

SHEET NUMBER: C-04

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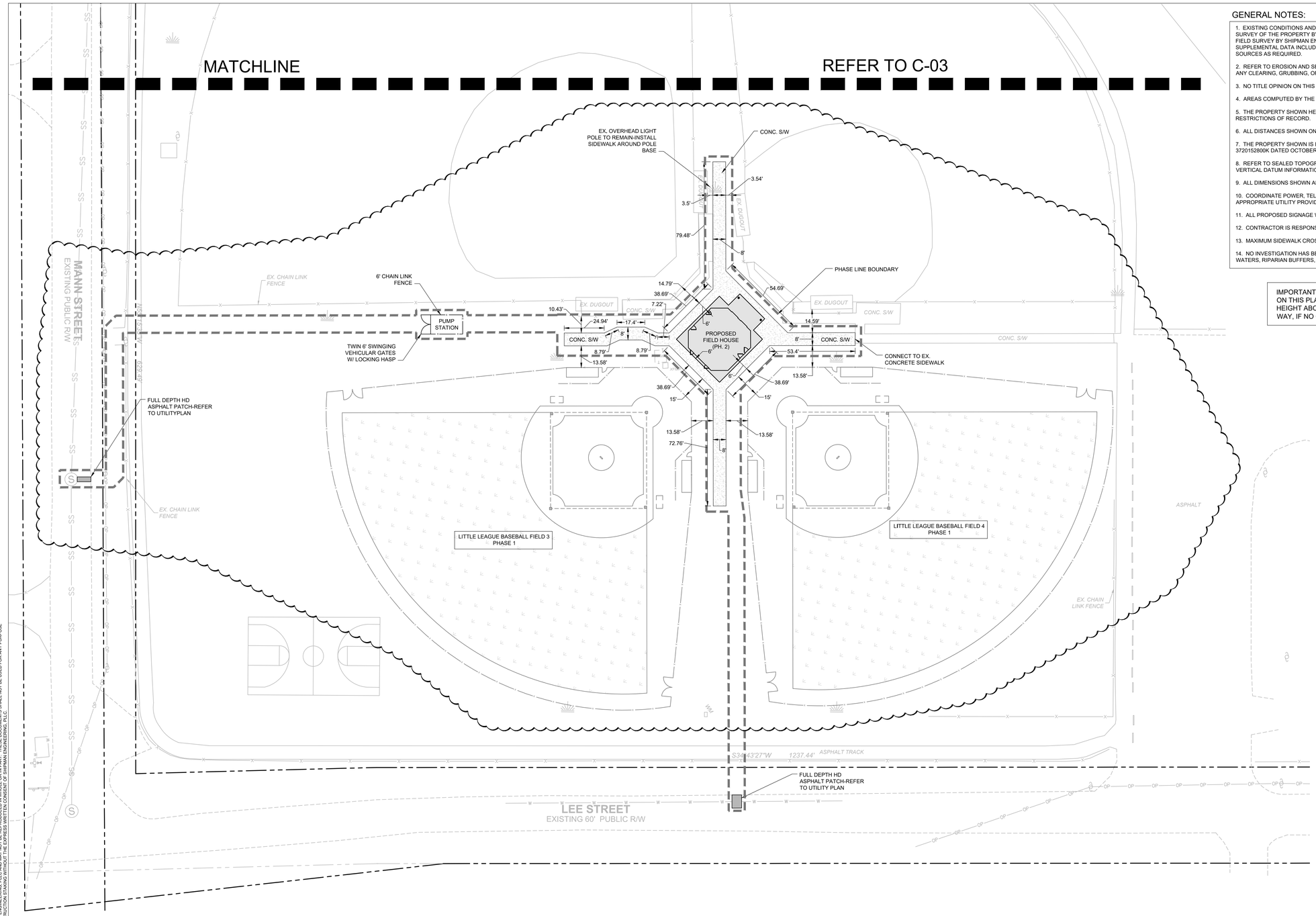

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SCALE IN FEET HORIZONTAL

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NORTH CAROLINA 035027 PROFESSIONAL ENGINEER WILLIAM E. SHIPMAN

5/8/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
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919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE LAYOUT PLAN II-PHASE 2

SHEET NUMBER: C-05

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LOCATION OF SANITARY SEWERS IN RELATION TO WATER AND STORM SEWERS:

A. SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY (DEH OR DENR) MAY ALLOW DEVIATION ON A CASE BY CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATER MAIN, PROVIDED THAT THE WATER MAIN IS IN A SEPERATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

B. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.

C. A 24 INCH VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR FERROUS PIPE SPECIFIED.

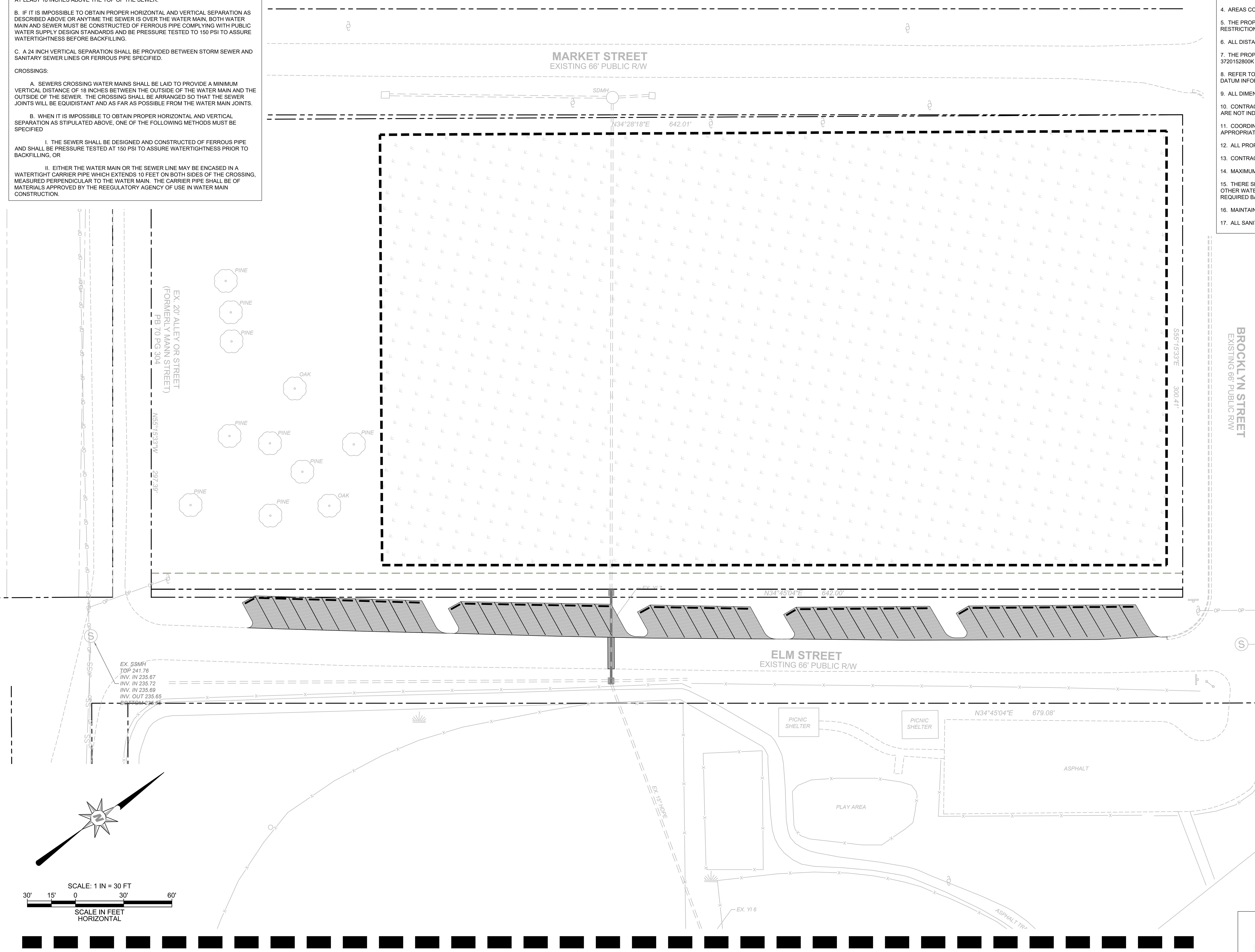
CROSSINGS:

A. SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.

B. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, ONE OF THE FOLLOWING METHODS MUST BE SPECIFIED

I. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED OF FERROUS PIPE AND SHALL BE PRESSURE TESTED AT 150 PSI TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING, OR

II. EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REEGULATORY AGENCY OF USE IN WATER MAIN CONSTRUCTION.



MATCHLINE

REFER TO C-07

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GENERAL NOTES:

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9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.

10. CONTRACTOR SHALL FIELD LOCATE SPILL CURB AS NEEDED FOR PROPER DRAINAGE. SPILL CURB LOCATIONS ARE NOT INDICATED ON THIS PLAN.

11. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.

12. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.

13. CONTRACTOR IS RESPONSIBLE FOR VERIFIYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.

14. MAXIMUM SIDEWALK CROSS SLOPE IS 2% (1/4 INCH PER FOOT).

15. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FDC POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN THE WATER METER AND ANY REQUIRED BACKFLOW PREVENTION DEVICES.

16. MAINTAIN A MINIMUM OF 3' COVER OVER ALL WATER PIPING.

17. ALL SANITARY SEWER CLEANOUTS IN PAVEMENT AREAS SHALL BE TRAFFIC RATED.

STANDARD UTILITY NOTES (AS APPLICABLE):

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH TOWN OF BENSON DESIGN STANDARDS, DETAILS, AND SPECIFICATIONS (2. UTILITY SEPARATION REQUIREMENTS:
   a. A DISTANCE OF 100 FEET SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25 FEET FROM A PRIVATE WELL OR 50 FEET FROM A PUBLIC WELL.
   b. WHEN INSTALLING WATER AND/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10 FEET. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER AND MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
   c. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10 FEET ON EACH SIDE OF CROSSING MUST BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS.
   d. 5 FEET MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER AND STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
   e. MAINTAIN 18 INCH MIN. VERTICAL SEPARATION AT ALL WATERMAIN AND RCP STORM DRAIN CROSSINGS; MAINTAIN 24 INCH MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER AND RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS AND A CONCRETE CRADLE HAVING 6 INCHES MIN. CLEARANCE
   f. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER AND SEWER FACILITIES WITH 18 INCH MIN. VERTICAL SEPARATION REQUIRED.

3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW AND APPROVAL OF AN AMENDED PLAN AND/OR PROFILE BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER AND SEWER SERVICE TO EXISTING RESIDENCES AND BUSINESSES THROUGHOUT CONSTRUCTION OF THE PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS AND SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER AND SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN AND REMOVAL OF SERVICE FROM ROW OR EASEMENT.
7. INSTALL 3/4 INCH COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANTS RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE.
8. INSTALL 4 INCH PVC* SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0 FEET ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE, AND/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND, AND/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT/RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. GREASE INTERCEPTOR/OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE TOWN OF BENSON PRIOR TO ISSUANCE OF A BUILDING PERMIT.
13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

UTILITY LEGEND

- FIRE HYDRANT ASSEMBLY
- GATE VALVE
- TEE
- THRUST (REACTION) BLOCKING
- BLOW OFF VALVE
- WATER METER
- BACKFLOW PREVENTER
- CLEANOUT
- SANITARY MANHOLE
- FLARED END SECTION
- RISER STRUCTURE
- CATCH BASIN
- YARD INLET
- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE

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NORTH CAROLINA PROFESSIONAL SEAL 035027 ENGINEER WILLIAM Z. SHIPMAN 5/01/2020

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LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE UTILITY PLAN I-PHASE 1

SHEET NUMBER: C-06

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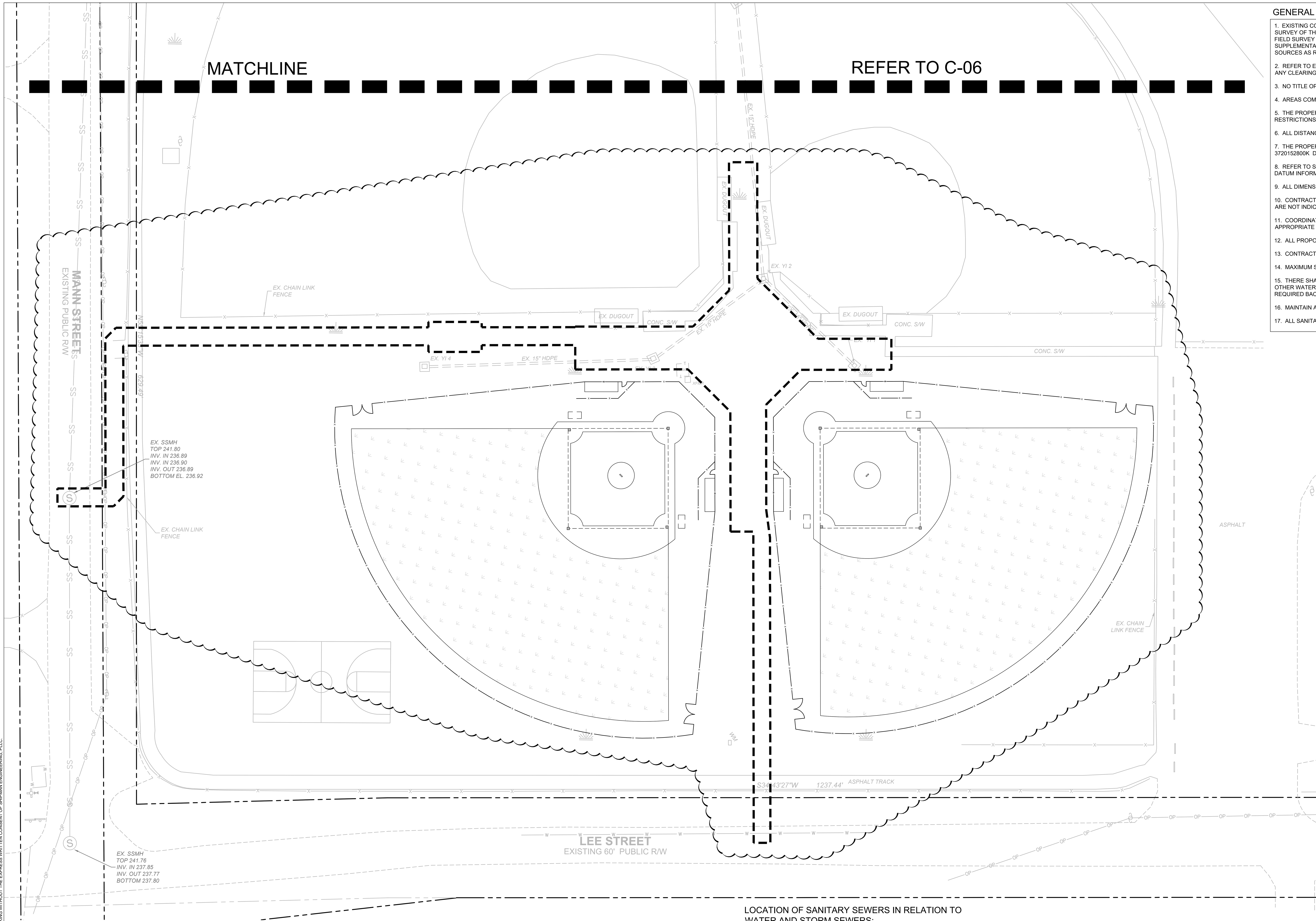


GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.

2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.

3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.

4. AREAS COMPUTED BY THE COORDINATE METHOD.

5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.

6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.

7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800K DATED OCTOBER 3, 2006.

8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.

9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.

10. CONTRACTOR SHALL FIELD LOCATE SPILL CURB AS NEEDED FOR PROPER DRAINAGE. SPILL CURB LOCATIONS ARE NOT INDICATED ON THIS PLAN.

11. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.

12. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.

13. CONTRACTOR IS RESPONSIBLE FOR VERIFIYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.

14. MAXIMUM SIDEWALK CROSS SLOPE IS 2% (1/4 INCH PER FOOT).

15. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FDC POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN THE WATER METER AND ANY REQUIRED BACKFLOW PREVENTION DEVICES.

16. MAINTAIN A MINIMUM OF 3' COVER OVER ALL WATER PIPING.

17. ALL SANITARY SEWER CLEANOUTS IN PAVEMENT AREAS SHALL BE TRAFFIC RATED.

STANDARD UTILITY NOTES (AS APPLICABLE):

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH TOWN OF BENSON DESIGN STANDARDS, DETAILS, AND SPECIFICATIONS (2. UTILITY SEPARATION REQUIREMENTS:

a. A DISTANCE OF 100 FEET SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25 FEET FROM A PRIVATE WELL OR 50 FEET FROM A PUBLIC WELL.

b. WHEN INSTALLING WATER AND/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10 FEET. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER AND MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

c. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10 FEET ON EACH SIDE OF CROSSING MUST BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS.

d. 5 FEET MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER AND STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.

e. MAINTAIN 18 INCH MIN. VERTICAL SEPARATION AT ALL WATERMAIN AND RCP STORM DRAIN CROSSINGS; MAINTAIN 24 INCH MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER AND RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS AND A CONCRETE CRADLE HAVING 6 INCHES MIN. CLEARANCE

f. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER AND SEWER FACILITIES WITH 18 INCH MIN. VERTICAL SEPARATION REQUIRED.

3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW AND APPROVAL OF AN AMENDED PLAN AND/OR PROFILE BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER AND SEWER SERVICE TO EXISTING RESIDENCES AND BUSINESSES THROUGHOUT CONSTRUCTION OF THE PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS AND SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER AND SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN AND REMOVAL OF SERVICE FROM ROW OR EASEMENT.
7. INSTALL 3/4 INCH COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANTS RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE.
8. INSTALL 4 INCH PVC* SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0 FEET ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE, AND/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND, AND/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT/RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. GREASE INTERCEPTOR/OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE TOWN OF BENSON PRIOR TO ISSUANCE OF A BUILDING PERMIT.
13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

LOCATION OF SANITARY SEWERS IN RELATION TO WATER AND STORM SEWERS:

A. SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY (DEH OR DENR) MAY ALLOW DEVIATION ON A CASE BY CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATER MAIN, PROVIDED THAT THE WATER MAIN IS IN A SEPERATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

B. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.

C. A 24 INCH VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR FERROUS PIPE SPECIFIED.

CROSSINGS:

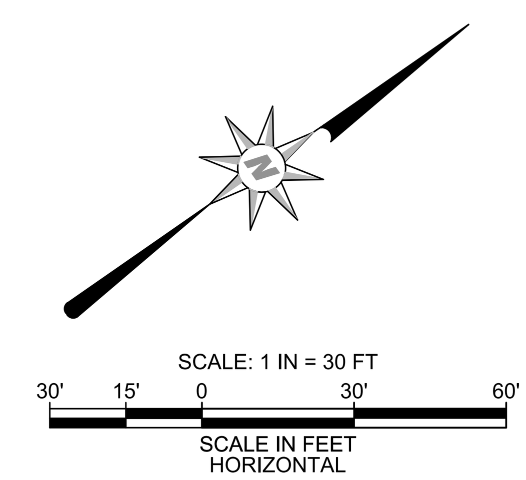
A. SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.

B. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, ONE OF THE FOLLOWING METHODS MUST BE SPECIFIED

I. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED OF FERROUS PIPE AND SHALL BE PRESSURE TESTED AT 150 PSI TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING, OR

II. EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REEGULATORY AGENCY OF USE IN WATER MAIN CONSTRUCTION.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.



811 Know what's below. Call before you dig.

SITE PLAN LEGEND

- FIRE HYDRANT ASSEMBLY
- GATE VALVE
- TEE
- THRUST (REACTION) BLOCKING
- BLOW OFF VALVE
- WATER METER
- BACKFLOW PREVENTER
- CLEANOUT
- SANITARY MANHOLE
- FLARED END SECTION
- RISER STRUCTURE
- CATCH BASIN
- YARD INLET
- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE

NORTH CAROLINA PROFESSIONAL SEAL 035027 ENGINEER WILLIAM Z. SHIPMAN
5/01/2020

REVISIONS

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING

SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC
COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE UTILITY PLAN II-PHASE 1

SHEET NUMBER:
C-07

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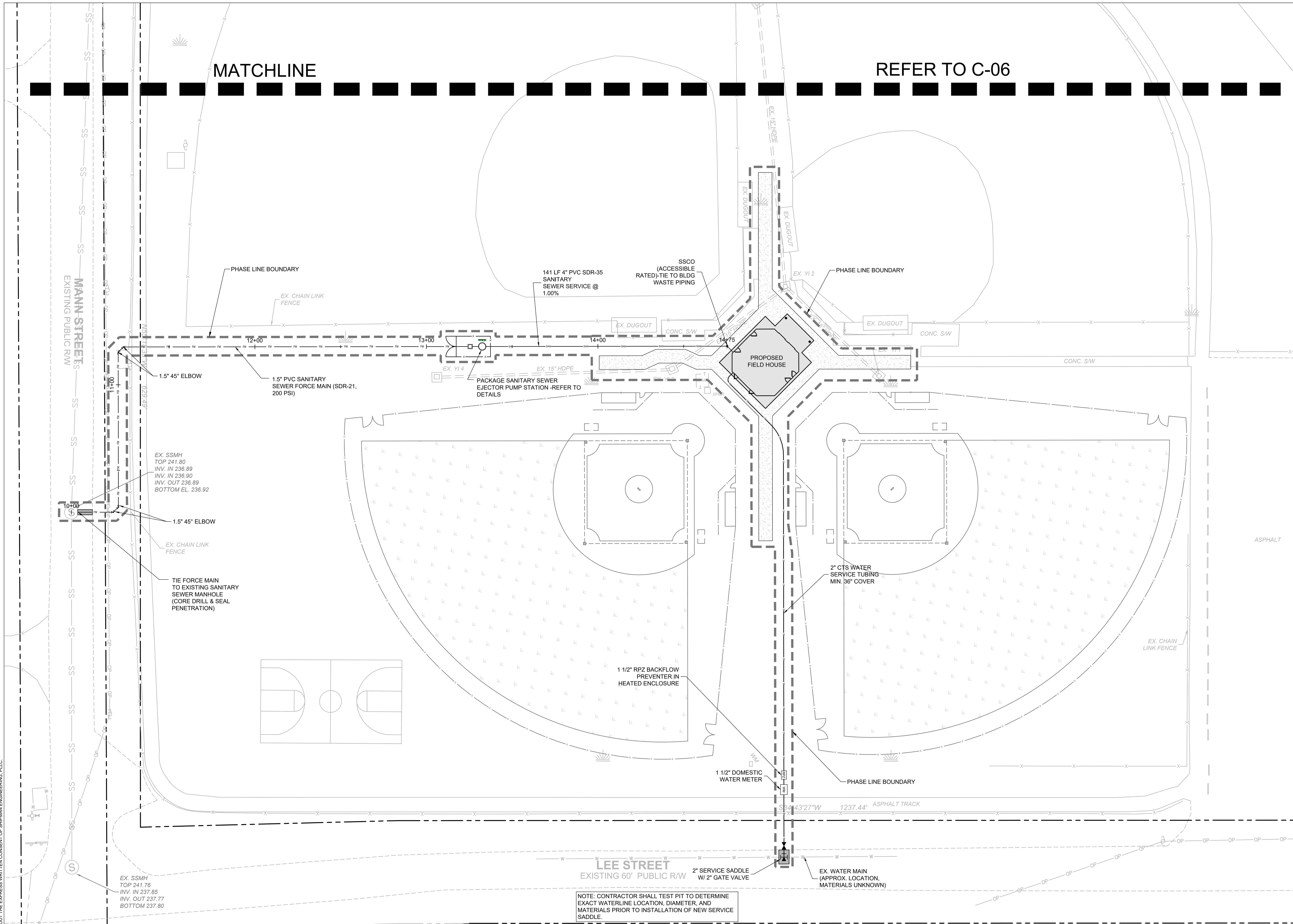

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B. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.

C. A 24 INCH VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR FERROUS PIPE SPECIFIED.

CROSSINGS:

A. SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.

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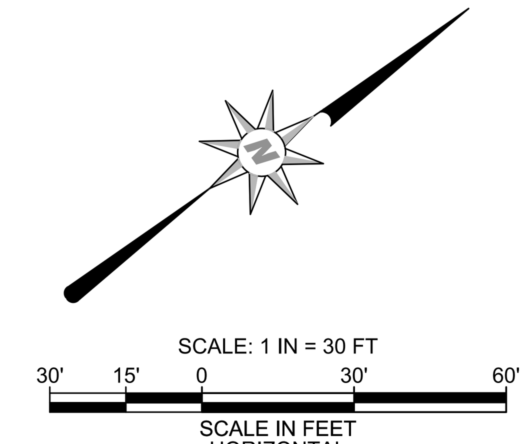
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.



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SITE PLAN LEGEND

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- TEE
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- WATER METER
- BACKFLOW PREVENTER
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SYMBOL	DATE	REVISIONS
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2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM Z. SHIPMAN 5/01/2020

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL SITE UTILITY PLAN II-PHASE 2

SHEET NUMBER: C-08

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ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

ACCESSIBILITY GRADING NOTES:

1. ALL CONCRETE SIDEWALK AND PEDESTRIAN AREAS WITHIN THE PROJECT BOUNDARY SHALL COMPLY WITH ADA ACCESSIBILITY REQUIREMENTS.
2. THE MAXIMUM SIDEWALK CROSS SLOPE SHALL BE 2%. THE MAXIMUM SIDEWALK RUNNING SLOPE SHALL BE 5%
3. CONTACT DESIGN ENGINEER SHOULD DISCREPANCIES BE FOUND WITH REGARD TO MATCHING THE EXISTING SIDEWALK GRADES.

GRADING AND DRAINAGE NOTES:

1. BEFORE YOU DIG, STOP. CALL THE NC ONE-CALL CENTER AT 1-800-632-4949. IT'S THE LAW. EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE AND OTHER UTILITIES BEFORE STARTING CONSTRUCTION. NOTIFY UTILITY LOCATING COMPANY (ONE CALL @ 1-800-632-4949) OR INDIVIDUAL UTILITY OWNERS FOR UNDERGROUND LOCATIONS AT LEAST 48 HOURS IN ADVANCE.
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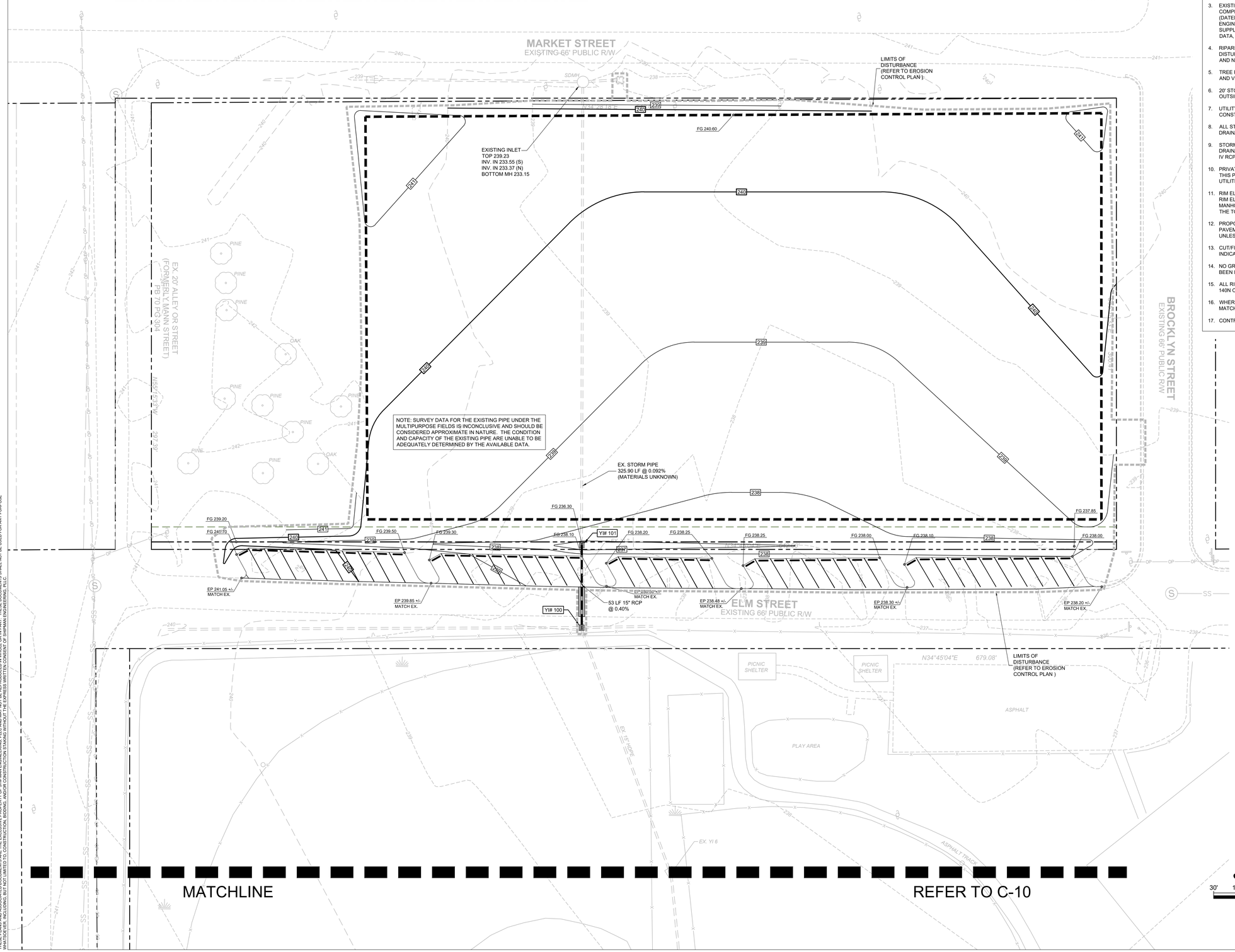

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GRADING & DRAINAGE LEGEND

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SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

811 Know what's below. Call before you dig.

NORTH CAROLINA 035027 PROFESSIONAL ENGINEER WILLIAM E. SHIPMAN 5/8/2020

REVISIONS		
SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING

SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL GRADING & DRAINAGE PLAN I PHASE 1

SHEET NUMBER:
C-09

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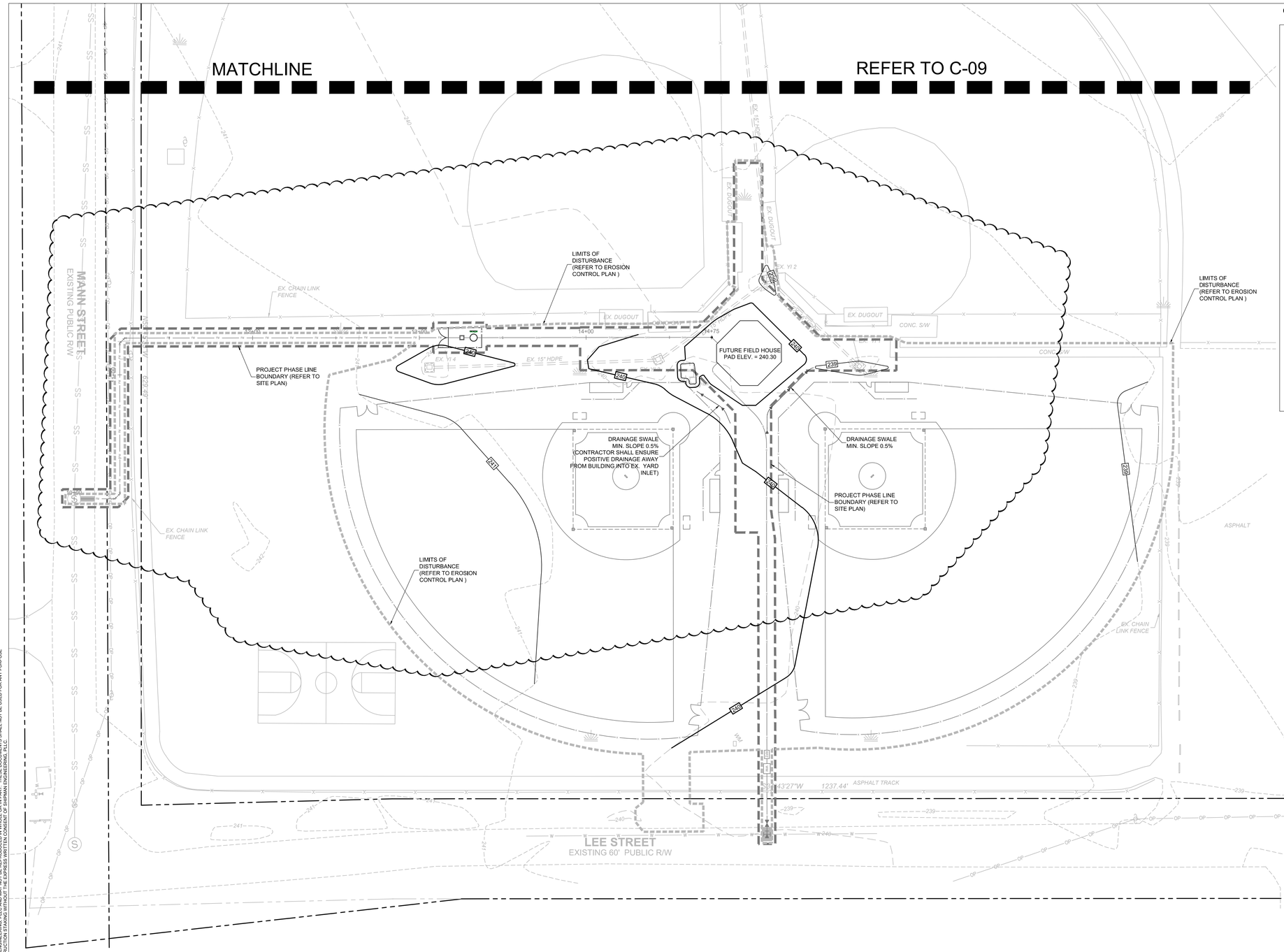

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1. ALL CONCRETE SIDEWALK AND PEDESTRIAN AREAS WITHIN THE PROJECT BOUNDARY SHALL COMPLY WITH ADA ACCESSIBILITY REQUIREMENTS.
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN 5/8/2020

REVISIONS

SYMBOL	DATE	
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SHIPMAN ENGINEERING

SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

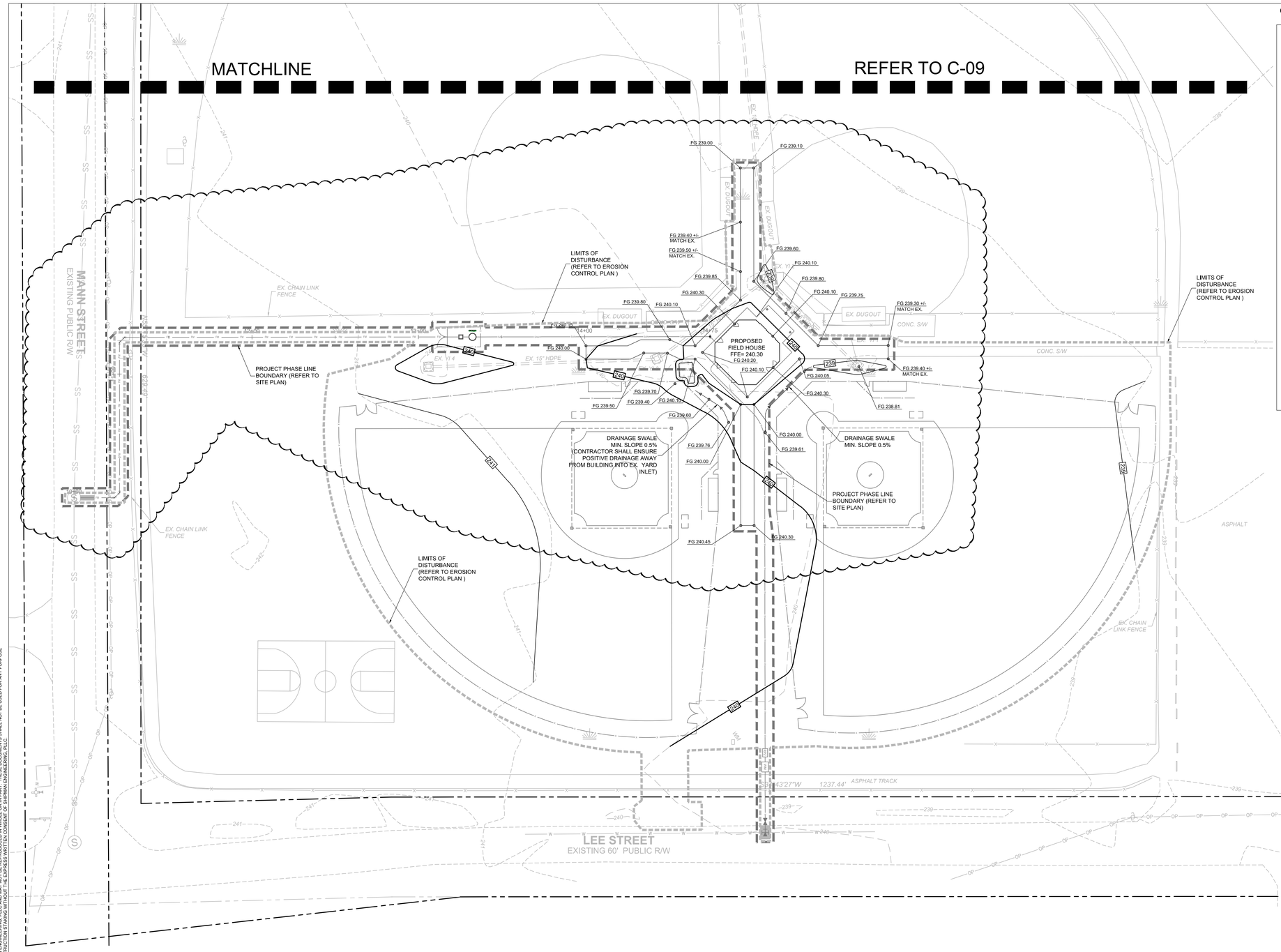
DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL GRADING & DRAINAGE PLAN II PHASE 1

SHEET NUMBER:
C-10



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- 4.0% — FLOW DIRECTION
- FG 387.46 — SPOT ELEVATION
- 400 — MAJOR CONTOUR
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- LIMITS OF DISTURBANCE
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN 5/8/2020

REVISIONS

SYMBOL	DATE	
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SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

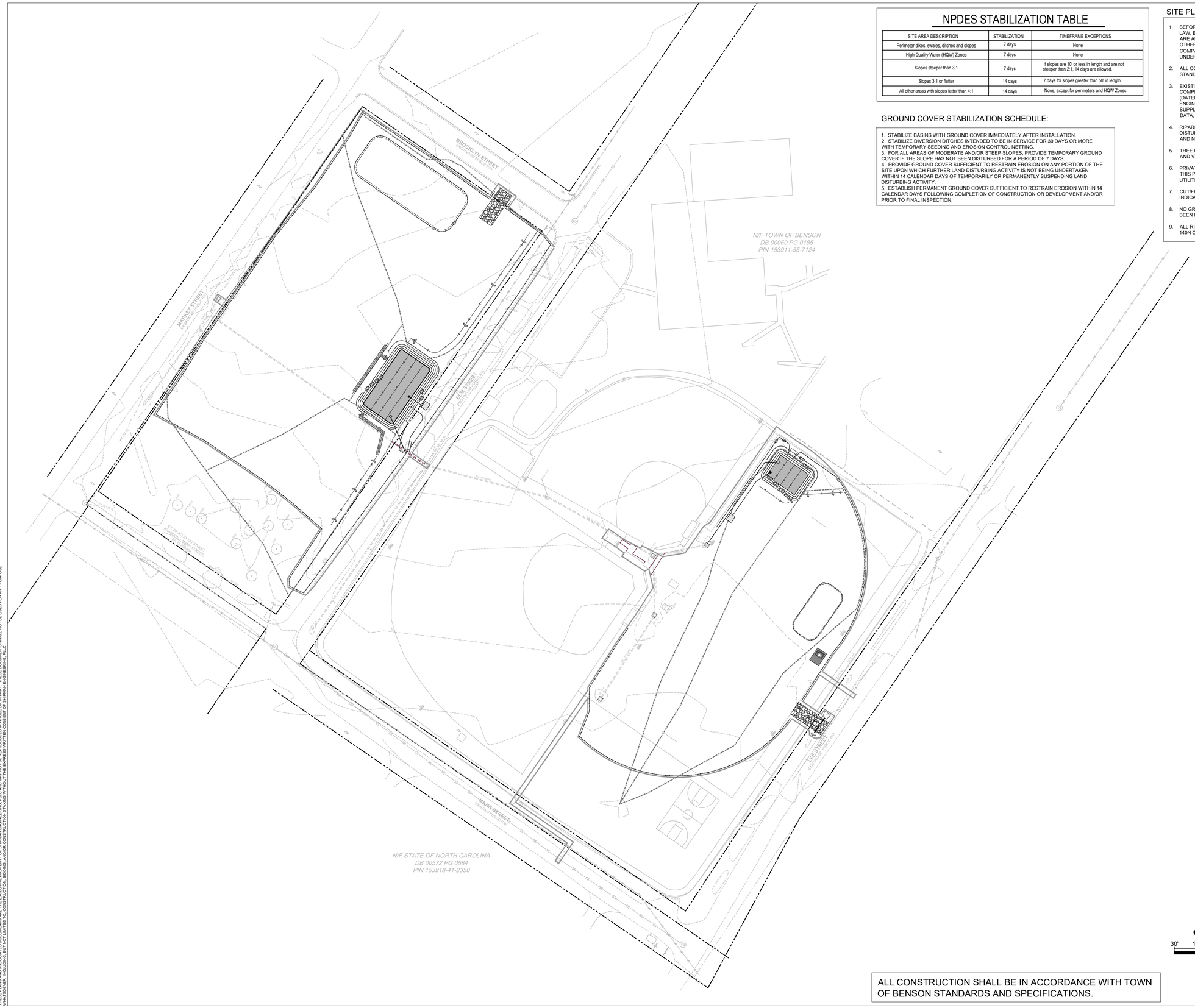
DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL GRADING & DRAINAGE PLAN II--PHASE 2

SHEET NUMBER: C-11



NPDES STABILIZATION TABLE

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
All other areas with slopes fatter than 4:1	14 days	None, except for perimeters and HQW Zones

GROUND COVER STABILIZATION SCHEDULE:

1. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
2. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
3. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF 7 DAYS.
4. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN 14 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
5. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

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EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
- SEDIMENT TRAP BOTTOM AREA
- RIP RAP FILTER DAM
- SILT FENCE OUTLET
- GRAVEL CHECK DAM
- TS M PS — TEMP. SEED/MULCH/PERM. SEED
- OUTLET PROTECTION
- SKIMMER DEVICE W/ OUTLET PIPE
- INLET PROTECTION
- DIVERSION DITCH
- SILT FENCE
- TP TP — TREE PROTECTION FENCE
- COIR MESH SEDIMENT BAFFLES
- DISTURBANCE LIMITS
- DRAINAGE AREA LIMITS
- DITCH LINER-ECX-2 EROSION CONTROL MAT
- DITCH LINER-ECSC-3 COCONUT TURF REINFORCEMENT MAT
- SLOPE MATTING-ECSC-3 COCONUT TURF REINFORCEMENT MAT

N

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN
5/6/2020

REVISIONS

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LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

OVERALL INITIAL PHASE EROSION CONTROL PLAN

SHEET NUMBER:
C-12

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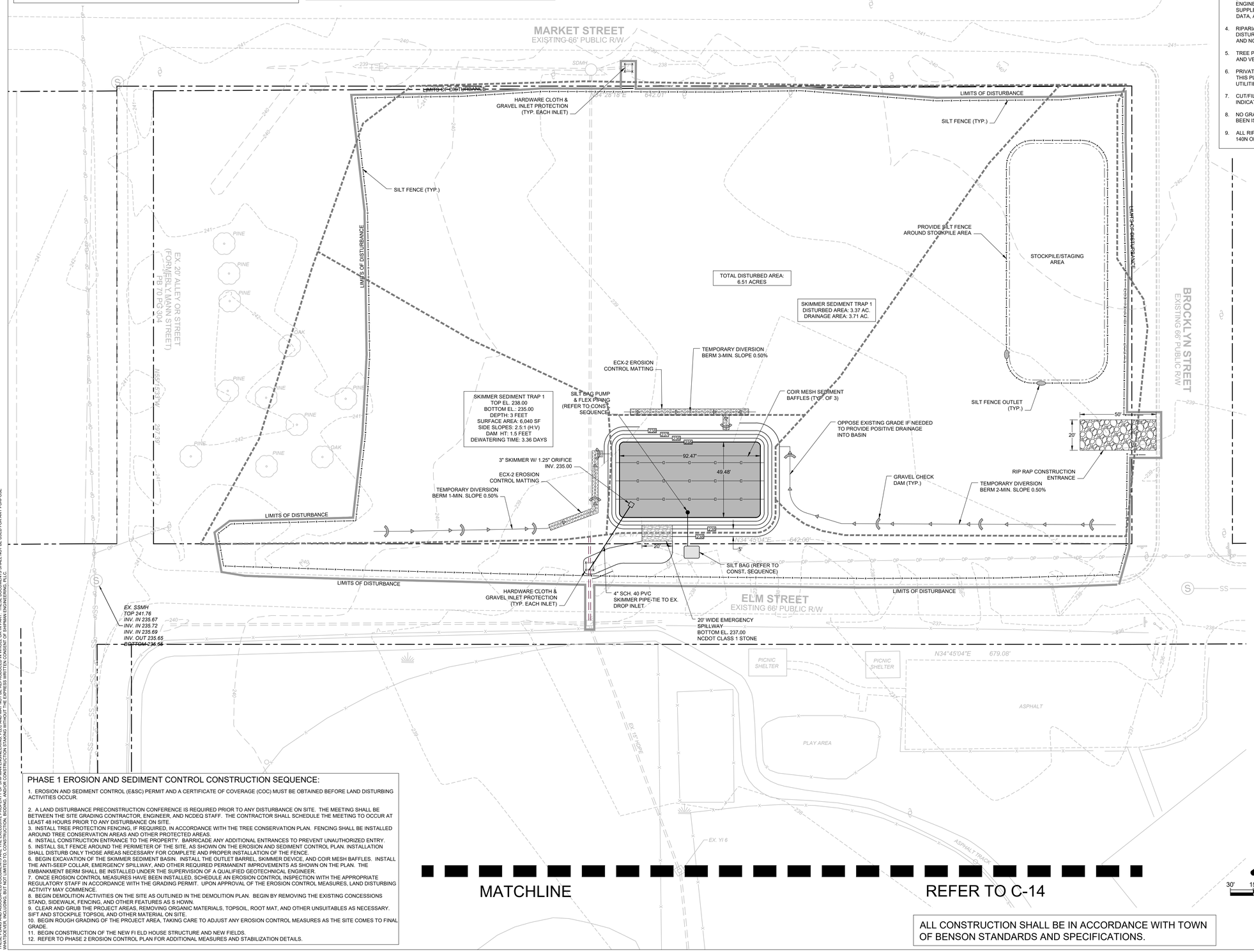
3. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.
4. RIPARIAN BUFFER AREAS SHALL NOT BE CLEARED, DRAINAGE, OR OTHERWISE DISTURBED UNLESS SPECIFICALLY PERMITTED BY THE US ARMY CORPS OF ENGINEERS AND NCDENR-DWQ.
5. TREE PROTECTION FENCING SHALL BE PROVIDED ALONG ALL VEGETATED RIPARIAN AND VEGETATED PERIMETER BUFFER AREAS AS WELL AS TREE CONSERVATION AREAS.
6. PRIVATE UTILITIES (POWER, TELEPHONE, NATURAL GAS, CABLE TV) ARE NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THOSE UTILITIES WHEN INSTALLING STORM DRAINAGE TO AVOID CONFLICTS.
7. CUT/FILL SLOPES SHALL BE GRADED AT A MAXIMUM OF 3H:1V UNLESS OTHERWISE INDICATED.
8. NO GRADING EQUIPMENT SHALL BE PERMITTED ON-SITE UNTIL A GRADING PERMIT HAS BEEN ISSUED BY JOHNSTON COUNTY AND/OR NCDEQ DIVISION OF LAND QUALITY.
9. ALL RIP-RAP IS TO BE INSTALLED WITH NON-WOVEN FILTER FABRIC BENEATH (MIRAFI 140N OR APPROVED EQUAL).



EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
- SEDIMENT TRAP BOTTOM AREA
- RIP RAP FILTER DAM
- SILT FENCE OUTLET
- GRAVEL CHECK DAM
- TEMP. SEED/MULCH/PERM. SEED (TS, M, PS)
- OUTLET PROTECTION
- SKIMMER DEVICE W/ OUTLET PIPE
- INLET PROTECTION
- DIVERSION DITCH
- SILT FENCE
- TREE PROTECTION FENCE (TP)
- COIR MESH SEDIMENT BAFFLES
- DISTURBANCE LIMITS
- DRAINAGE AREA LIMITS
- DITCH LINER-ECX-2 EROSION CONTROL MAT
- DITCH LINER-ECSC-3 COCONUT TURF REINFORCEMENT MAT
- SLOPE MATTING-ECSC-3 COCONUT TURF REINFORCEMENT MAT

SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

PHASE 1 EROSION AND SEDIMENT CONTROL CONSTRUCTION SEQUENCE:

1. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE LAND DISTURBING ACTIVITIES OCCUR.

2. A LAND DISTURBANCE PRECONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO ANY DISTURBANCE ON SITE. THE MEETING SHALL BE BETWEEN THE SITE GRADING CONTRACTOR, ENGINEER, AND NCDEQ STAFF. THE CONTRACTOR SHALL SCHEDULE THE MEETING TO OCCUR AT LEAST 48 HOURS PRIOR TO ANY DISTURBANCE ON SITE.
3. INSTALL TREE PROTECTION FENCING, IF REQUIRED, IN ACCORDANCE WITH THE TREE CONSERVATION PLAN. FENCING SHALL BE INSTALLED AROUND TREE CONSERVATION AREAS AND OTHER PROTECTED AREAS.
4. INSTALL CONSTRUCTION ENTRANCE TO THE PROPERTY. BARRICADE ANY ADDITIONAL ENTRANCES TO PREVENT UNAUTHORIZED ENTRY.
5. INSTALL SILT FENCE AROUND THE PERIMETER OF THE SITE, AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN. INSTALLATION SHALL DISTURB ONLY THOSE AREAS NECESSARY FOR COMPLETE AND PROPER INSTALLATION OF THE FENCE.
6. BEGIN EXCAVATION OF THE SKIMMER SEDIMENT BASIN. INSTALL THE OUTLET BARREL, SKIMMER DEVICE, AND COIR MESH BAFFLES. INSTALL THE ANTI-SEEP COLLAR, EMERGENCY SPILLWAY, AND OTHER REQUIRED PERMANENT IMPROVEMENTS AS SHOWN ON THE PLAN. THE EMBANKMENT BERM SHALL BE INSTALLED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER
7. ONCE EROSION CONTROL MEASURES HAVE BEEN INSTALLED, SCHEDULE AN EROSION CONTROL INSPECTION WITH THE APPROPRIATE REGULATORY STAFF IN ACCORDANCE WITH THE GRADING PERMIT. UPON APPROVAL OF THE EROSION CONTROL MEASURES, LAND DISTURBING ACTIVITY MAY COMMENCE.
8. BEGIN DEMOLITION ACTIVITIES ON THE SITE AS OUTLINED IN THE DEMOLITION PLAN. BEGIN BY REMOVING THE EXISTING CONCESSIONS STAND, SIDEWALK, FENCING, AND OTHER FEATURES AS S HOWN.
9. CLEAR AND GRUB THE PROJECT AREAS, REMOVING ORGANIC MATERIALS, TOPSOIL, ROOT MAT, AND OTHER UNSUITABLES AS NECESSARY. SIFT AND STOCKPILE TOPSOIL AND OTHER MATERIAL ON SITE.
10. BEGIN ROUGH GRADING OF THE PROJECT AREA, TAKING CARE TO ADJUST ANY EROSION CONTROL MEASURES AS THE SITE COMES TO FINAL GRADE.
11. BEGIN CONSTRUCTION OF THE NEW FI ELD HOUSE STRUCTURE AND NEW FIELDS.
12. REFER TO PHASE 2 EROSION CONTROL PLAN FOR ADDITIONAL MEASURES AND STABILIZATION DETAILS.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

Know what's below. Call before you dig.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN 5/8/2020

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL EROSION & SEDIMENT CONTROL PLAN I-INITIAL PHASE

SHEET NUMBER: C-13

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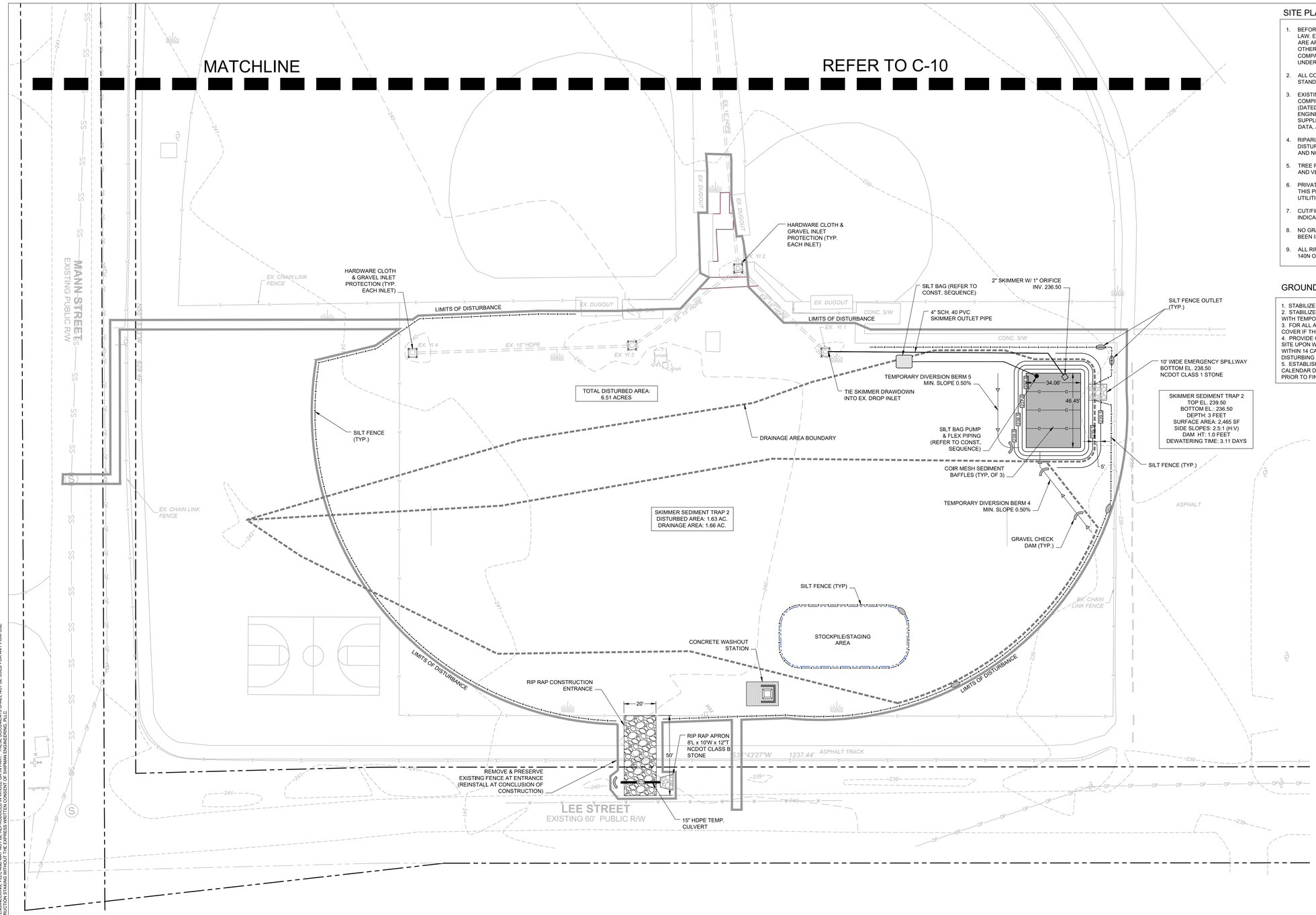

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GROUND COVER STABILIZATION SCHEDULE:

1. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
2. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
3. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF 7 DAYS.
4. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN 14 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
5. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

NPDES STABILIZATION TABLE

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
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SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET
HORIZONTAL

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EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN
5/8/2020

SYMBOL	DATE	REVISIONS
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2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL EROSION & SEDIMENT CONTROL PLAN II-INITIAL PHASE

SHEET NUMBER:
C-14

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NPDES STABILIZATION TABLE

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SITE PLAN NOTES:

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7. CUT/FILL SLOPES SHALL BE GRADED AT A MAXIMUM OF 3H:1V UNLESS OTHERWISE INDICATED.
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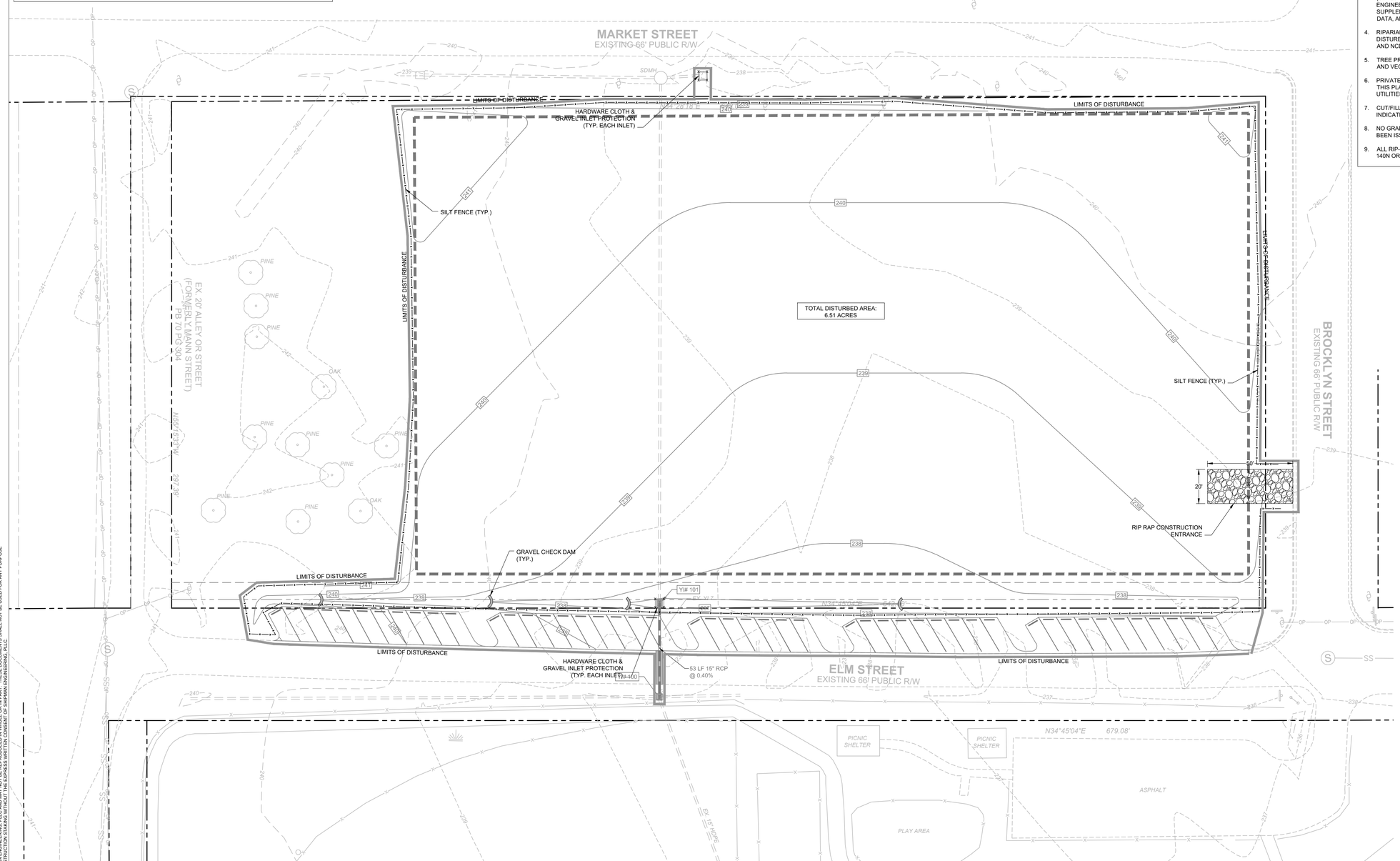

EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
- SEDIMENT TRAP BOTTOM AREA
- RIP RAP FILTER DAM
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- SLOPE MATTING-ECSC-3 COCONUT TURF REINFORCEMENT MAT

PHASE 2 EROSION AND SEDIMENT CONTROL CONSTRUCTION SEQUENCE:

1. CONTINUE ROUGH GRADING SITE TO BRING PROJECT AREA TO FINAL GRADE. ADJUST EROSION CONTROL MEASURES DAILY TO FIT NEW SITE GRADES AS LAND AREA IS BROUGHT TO FINAL ELEVATION.
2. CONTINUE WORK ON THE NEW FIELD HOUSE, BASEBALL FIELDS, AND MULTIPURPOSE FIELDS.
3. BEGIN INSTALLATION OF ANY STORM DRAINAGE PIPING, WATER, AND SANITARY SEWER IN THE PROJECT SITE. INSTALL HARDWARE CLOTH INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN NETWORK AS SOON AS NEW STORM INLETS ARE INSTALLED.
4. DIRECT ALL STORMWATER RUNOFF TO THE SEDIMENT BASIN AS NECESSARY FROM ALL DISTURBED SOILS. DO NOT PERMIT SEDIMENT LADEN WATER TO ESCAPE OFFSITE WITHOUT FLOWING THROUGH THE SEDIMENT BASIN.
5. FINE GRADE ALL PAVED AREAS AND INSTALL ROADWAY SUBGRADE, CURB AND GUTTER, AND OTHER SITE FEATURES.
6. COMPLETE PAVING AND CONCRETE FLATWORK AREAS. INSTALL LANDSCAPING AS SHOWN ON THE LANDSCAPING PLAN.
7. ONCE ALL UPGRADIENT AREAS ARE PERMANENTLY STABILIZED WITH VEGETATION AND BUILDING CONSTRUCTION IS SUBSTANTIALLY COMPLETE, THE CONTRACTOR MAY REMOVE THE SKIMMER SEDIMENT BASINS. NOTE THAT SEEDING DOES NOT QUALITY AS PERMANENT STABILIZATION. UPGRADIENT AREAS MUST INCLUDE AN ADEQUATE STAND OF PERMENENT VEGETATION TO BE CONSIDERED STABILIZED.
8. DEWATER THE EXISTING SEDIMENT BASINS BY PUMPING SEDIMENT LADEN WATER THROUGH A SILT BAG PRIOR TO DISCHARGE. THE PUMP FOR THE SILT BAG SHALL BE INSTALLED IN OUTLET CELL OF THE SKIMMER BASIN (I.E. THE SAME CELL AS SKIMMER DEVICE). REFER TO PHASE I EROSION CONTROL DRAWINGS FOR BAG LOCATION, PUMP LOCATION, AND DISCHARGE PIPING LOCATIONS.
9. ONCE BASIN IS SUFFICIENTLY DEWATERED, REMOVE COIR MESH SEDIMENT BAFFLES, TRASH, AND OTHER ACCUMULATED DEBRIS. REMOVE THE SKIMMER DEVICE AND SEAL THE EXISTING DRAINAGE STRUCTURES WITH WATERTIGHT SEAL.
10. FINE GRADE, SEED, AND STABILIZE THE AREAS PREVIOUSLY OCCUPIED BY THE SKIMMER BASIN AS SHOWN ON THE PLANS.
11. IF CONSTRUCTION IS COMPLETE, SCHEDULE A FINAL INSPECTION WITH NCDEQ INSPECTIONS STAFF. IF THE SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, BASINS, ETC. AND SEED OR STABILIZE ANY REMAINING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
12. WHEN THE PROJECT IS COMPLETED, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (e-NOT). A $100 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE e-NOT HAS BEEN FILLED OUT.

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30' 15' 0 30' 60'
SCALE IN FEET HORIZONTAL

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5/8/2020

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DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL EROSION & SEDIMENT CONTROL PLAN I-FINAL PHASE

SHEET NUMBER: C-15

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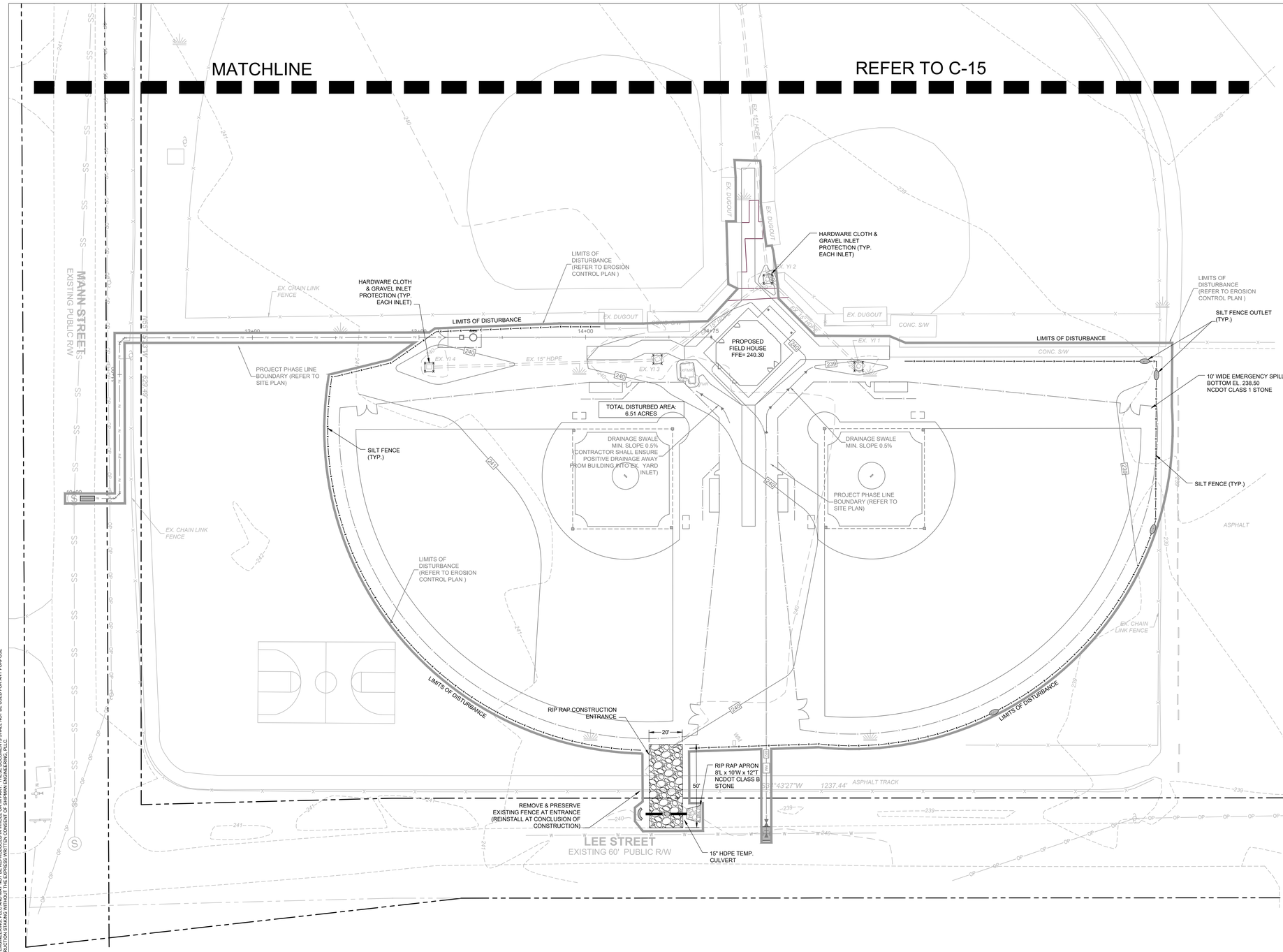


SITE PLAN NOTES:

1. BEFORE YOU DIG, STOP, CALL THE NC ONE-CALL CENTER AT 1-800-632-4949. IT'S THE LAW. EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE AND OTHER UTILITIES BEFORE STARTING CONSTRUCTION. NOTIFY UTILITY LOCATING COMPANY (ONE CALL @ 1-800-632-4949) OR INDIVIDUAL UTILITY OWNERS FOR UNDERGROUND LOCATIONS AT LEAST 48 HOURS IN ADVANCE.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF BENSON STANDARD SPECIFICATIONS AND DETAILS.
3. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.
4. RIPARIAN BUFFER AREAS SHALL NOT BE CLEARED, DRAINAGE, OR OTHERWISE DISTURBED UNLESS SPECIFICALLY PERMITTED BY THE US ARMY CORPS OF ENGINEERS AND NCDENR-DWQ.
5. TREE PROTECTION FENCING SHALL BE PROVIDED ALONG ALL VEGETATED RIPARIAN AND VEGETATED PERIMETER BUFFER AREAS AS WELL AS TREE CONSERVATION AREAS.
6. PRIVATE UTILITIES (POWER, TELEPHONE, NATURAL GAS, CABLE TV) ARE NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THOSE UTILITIES WHEN INSTALLING STORM DRAINAGE TO AVOID CONFLICTS.
7. CUT/FILL SLOPES SHALL BE GRADED AT A MAXIMUM OF 3H:1V UNLESS OTHERWISE INDICATED.
8. NO GRADING EQUIPMENT SHALL BE PERMITTED ON-SITE UNTIL A GRADING PERMIT HAS BEEN ISSUED BY JOHNSTON COUNTY AND/OR NCDEQ DIVISION OF LAND QUALITY.
9. ALL RIP-RAP IS TO BE INSTALLED WITH NON-WOVEN FILTER FABRIC BENEATH (MIRAFI 140N OR APPROVED EQUAL).

PHASE 2 EROSION AND SEDIMENT CONTROL CONSTRUCTION SEQUENCE:

1. CONTINUE ROUGH GRADING SITE TO BRING PROJECT AREA TO FINAL GRADE. ADJUST EROSION CONTROL MEASURES DAILY TO FIT NEW SITE GRADES AS LAND AREA IS BROUGHT TO FINAL ELEVATION.
2. CONTINUE WORK ON THE NEW FIELD HOUSE, BASEBALL FIELDS, AND MULTIPURPOSE FIELDS.
3. BEGIN INSTALLATION OF ANY STORM DRAINAGE PIPING, WATER, AND SANITARY SEWER IN THE PROJECT SITE. INSTALL HARDWARE CLOTH INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN NETWORK AS SOON AS NEW STORM INLETS ARE INSTALLED.
4. DIRECT ALL STORMWATER RUNOFF TO THE SEDIMENT BASIN AS NECESSARY FROM ALL DISTURBED SOILS. DO NOT PERMIT SEDIMENT LADEN WATER TO ESCAPE OFFSITE WITHOUT FLOWING THROUGH THE SEDIMENT BASIN.
5. FINE GRADE ALL PAVED AREAS AND INSTALL ROADWAY SUBGRADE, CURB AND GUTTER, AND OTHER SITE FEATURES.
6. COMPLETE PAVING AND CONCRETE FLATWORK AREAS. INSTALL LANDSCAPING AS SHOWN ON THE LANDSCAPING PLAN.
7. ONCE ALL UPGRADIENT AREAS ARE PERMANENTLY STABILIZED WITH VEGETATION AND BUILDING CONSTRUCTION IS SUBSTANTIALLY COMPLETE, THE CONTRACTOR MAY REMOVE THE SKIMMER SEDIMENT BASINS. NOTE THAT SEEDING DOES NOT QUALITY AS PERMANENT STABILIZATION. UPGRADIENT AREAS MUST INCLUDE AN ADEQUATE STAND OF PERMENENT VEGETATION TO BE CONSIDERED STABILIZED.
8. DEWATER THE EXISTING SEDIMENT BASINS BY PUMPING SEDIMENT LADEN WATER THROUGH A SILT BAG PRIOR TO DISCHARGE. THE PUMP FOR THE SILT BAG SHALL BE INSTALLED IN OUTLET CELL OF THE SKIMMER BASIN (I.E. THE SAME CELL AS SKIMMER DEVICE). REFER TO PHASE I EROSION CONTROL DRAWINGS FOR BAG LOCATION, PUMP LOCATION, AND DISCHARGE PIPING LOCATIONS.
9. ONCE BASIN IS SUFFICIENTLY DEWATERED, REMOVE COIR MESH SEDIMENT BAFFLES, TRASH, AND OTHER ACCUMULATED DEBRIS. REMOVE THE SKIMMER DEVICE AND SEAL THE EXISTING DRAINAGE STRUCTURES WITH WATERTIGHT SEAL.
10. FINE GRADE, SEED, AND STABILIZE THE AREAS PREVIOUSLY OCCUPIED BY THE SKIMMER BASIN AS SHOWN ON THE PLANS.
11. IF CONSTRUCTION IS COMPLETE, SCHEDULE A FINAL INSPECTION WITH NCDEQ INSPECTIONS STAFF. IF THE SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, BASINS, ETC. AND SEED OR STABILIZE ANY REMAINING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
12. WHEN THE PROJECT IS COMPLETED, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (e-NOT). A $100 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE e-NOT HAS BEEN FILLED OUT.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

NPDES STABILIZATION TABLE

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
All other areas with slopes fatter than 4:1	14 days	None, except for perimeters and HQW Zones

GROUND COVER STABILIZATION SCHEDULE:

1. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
2. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
3. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF 7 DAYS.
4. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN 14 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
5. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

811 Know what's below. Call before you dig.

EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
- SEDIMENT TRAP BOTTOM AREA
- RIP RAP FILTER DAM
- SILT FENCE OUTLET
- GRAVEL CHECK DAM
- TEMP. SEED/MULCH/PERM. SEED (TS, M, PS)
- OUTLET PROTECTION
- SKIMMER DEVICE W/ OUTLET PIPE
- INLET PROTECTION
- DIVERSION DITCH
- SILT FENCE
- TREE PROTECTION FENCE (TP)
- COIR MESH SEDIMENT BAFFLES
- DISTURBANCE LIMITS
- DRAINAGE AREA LIMITS
- DITCH LINER-ECX-2 EROSION CONTROL MAT
- DITCH LINER-ECSC-3 COCONUT TURF REINFORCEMENT MAT
- SLOPE MATTING-ECSC-3 COCONUT TURF REINFORCEMENT MAT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN 5/8/2020

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

PARTIAL EROSION & SEDIMENT CONTROL PLAN II-FINAL PHASE

SHEET NUMBER: C-16

THESE PLANS AND ASSOCIATED DOCUMENTS ARE, THE EXCLUSIVE PROPERTY OF SHIPMAN ENGINEERING, PLLC AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART. THESE DOCUMENTS SHALL NOT BE USED FOR ANY PURPOSE NOT SPECIFICALLY AUTHORIZED IN WRITING BY SHIPMAN ENGINEERING, PLLC. ©2019 SHIPMAN ENGINEERING, PLLC

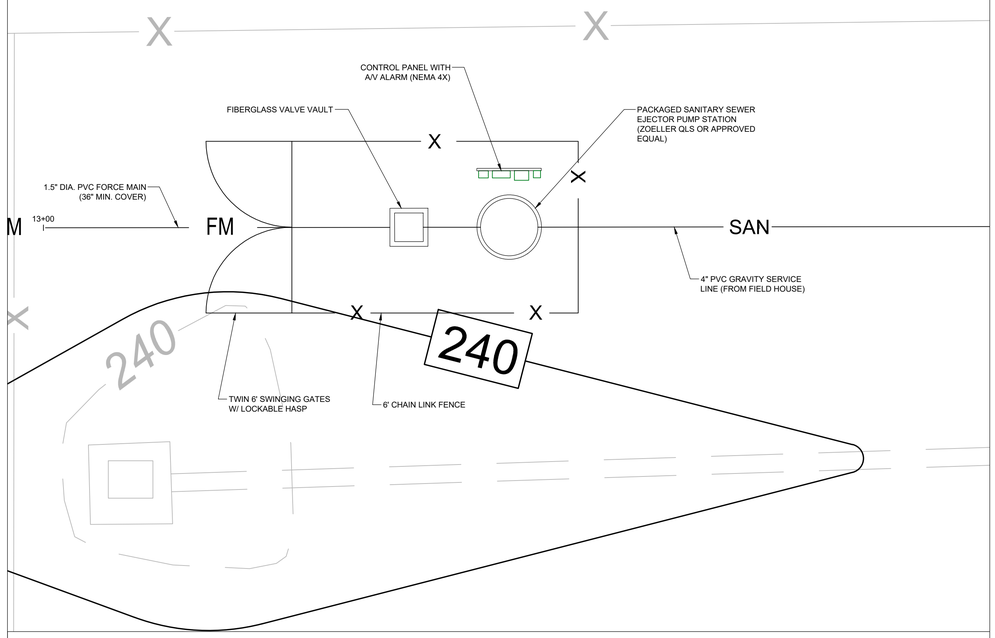
IMPORTANT NOTES:

1. THE PACKAGED PUMP STATION MANUFACTURER SHALL SUPPLY A DUPLEX CONTROL PANEL FOR AUTOMATIC PUMPS AS A COMPONENT OF THE PACKAGED SYSTEM.

2. THE CONTROL PANEL SHALL INCLUDE AN AUDIBLE/VISUAL HIGH WATER ALARM.

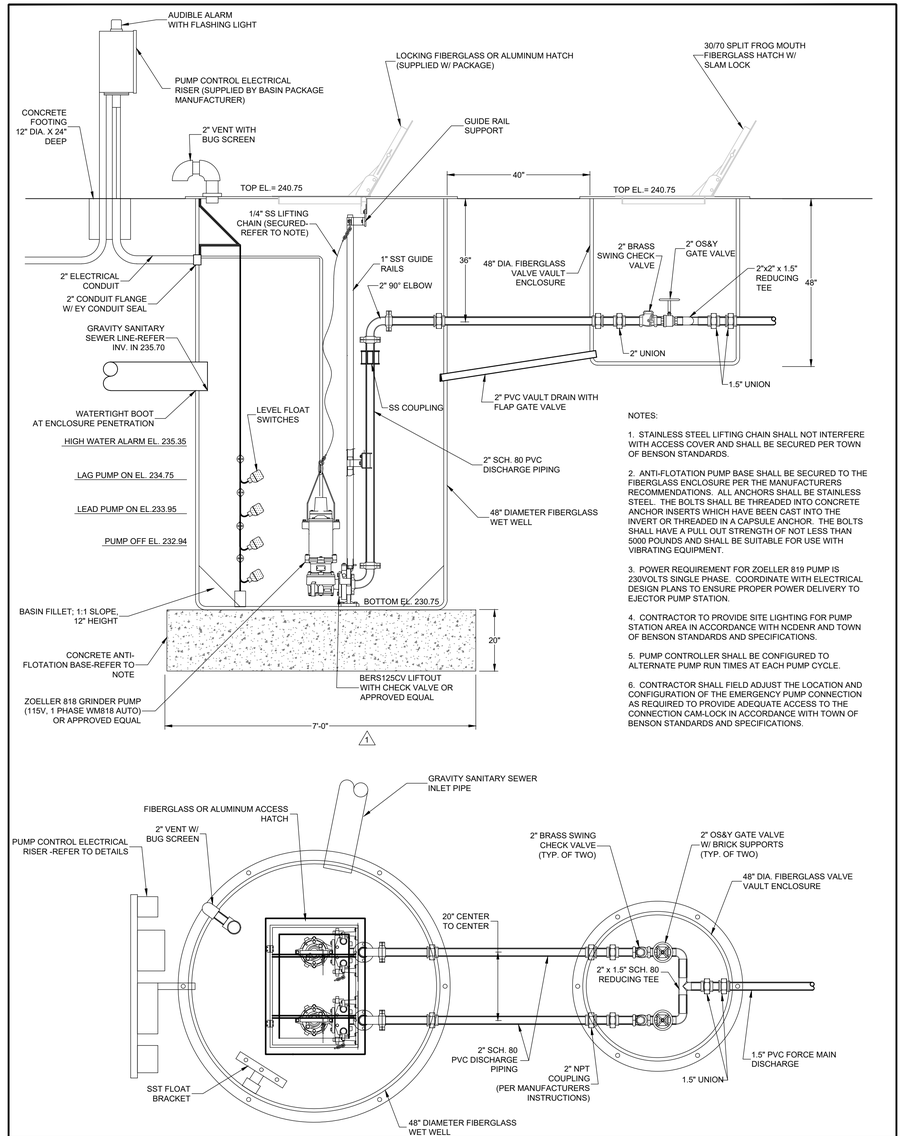
3. CONTROL PANEL ENCLOSURE SHALL COMPLY WITH NEMA 4X AND SHALL FEATURE A HAND-OFF-AUTO TOGGLE FOR EACH PUMP, GREEN PUMP RUN PILOT LIGHT, AND ALARM TEST AND SILENCE SWITCHES.

4. THE CONTROL PANEL SHALL BE CONFIGURED TO PROVIDE AUTOMATIC PUMP ALTERNATION WITH EACH PUMPING CYCLE.



SANITARY SEWER PACKAGED EJECTOR LIFT STATION PLAN VIEW

SCALE: 1"=5'



NOTES:

1. STAINLESS STEEL LIFTING CHAIN SHALL NOT INTERFERE WITH ACCESS COVER AND SHALL BE SECURED PER TOWN OF BENSON STANDARDS.

2. ANTI-FLOTATION PUMP BASE SHALL BE SECURED TO THE FIBERGLASS ENCLOSURE PER THE MANUFACTURERS RECOMMENDATIONS. ALL ANCHORS SHALL BE STAINLESS STEEL. THE BOLTS SHALL BE THREADED INTO CONCRETE ANCHOR INSERTS WHICH HAVE BEEN CAST INTO THE INVERT OR THREADED IN A CAPSULE ANCHOR. THE BOLTS SHALL HAVE A PULL OUT STRENGTH OF NOT LESS THAN 5000 POUNDS AND SHALL BE SUITABLE FOR USE WITH VIBRATING EQUIPMENT.

3. POWER REQUIREMENT FOR ZOELLER 819 PUMP IS 230VOLTS SINGLE PHASE. COORDINATE WITH ELECTRICAL DESIGN PLANS TO ENSURE PROPER POWER DELIVERY TO EJECTOR PUMP STATION.

4. CONTRACTOR TO PROVIDE SITE LIGHTING FOR PUMP STATION AREA IN ACCORDANCE WITH NCDENR AND TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

5. PUMP CONTROLLER SHALL BE CONFIGURED TO ALTERNATE PUMP RUN TIMES AT EACH PUMP CYCLE.

6. CONTRACTOR SHALL FIELD ADJUST THE LOCATION AND CONFIGURATION OF THE EMERGENCY PUMP CONNECTION AS REQUIRED TO PROVIDE ADEQUATE ACCESS TO THE CONNECTION CAM-LOCK IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

SANITARY SEWER PACKAGED EJECTOR LIFT STATION DETAILS

NOT TO SCALE

GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.

2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.

3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.

4. AREAS COMPUTED BY THE COORDINATE METHOD.

5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.

6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.

7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800K DATED OCTOBER 3, 2006.

8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.

9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.

10. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.

11. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.

12. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.

13. NO INVESTIGATION HAS BEEN PERFORMED AS TO THE PRESENCE OF WETLANDS, STREAMS, SURFACE WATERS, RIPARIAN BUFFERS, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS.

SITE PLAN LEGEND

- STREET LIGHT
- SIGN
- WCR — WHEELCHAIR RAMP
- CBU — CLUSTER MAILBOX UNIT
- ROADWAY CENTER LINE
- LOT LINE
- RIGHT OF WAY LINE
- RETAINING WALL
- SETBACK LINE
- BMP LIMITS
- EASEMENT
- STANDARD CURB & GUTTER
- SPILL CURB & GUTTER
- ORNAMENTAL FENCE
- FENCE
- OPEN SPACE AREA

SCALE: 1 IN = 30 FT

30' 15' 0 30' 60'

SCALE IN FEET HORIZONTAL

Know what's below. Call before you dig.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM Z. SHIPMAN

5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
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DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

SANITARY SEWER PACKAGED LIFT STATION DETAILS & SECTIONS

SHEET NUMBER: C-17

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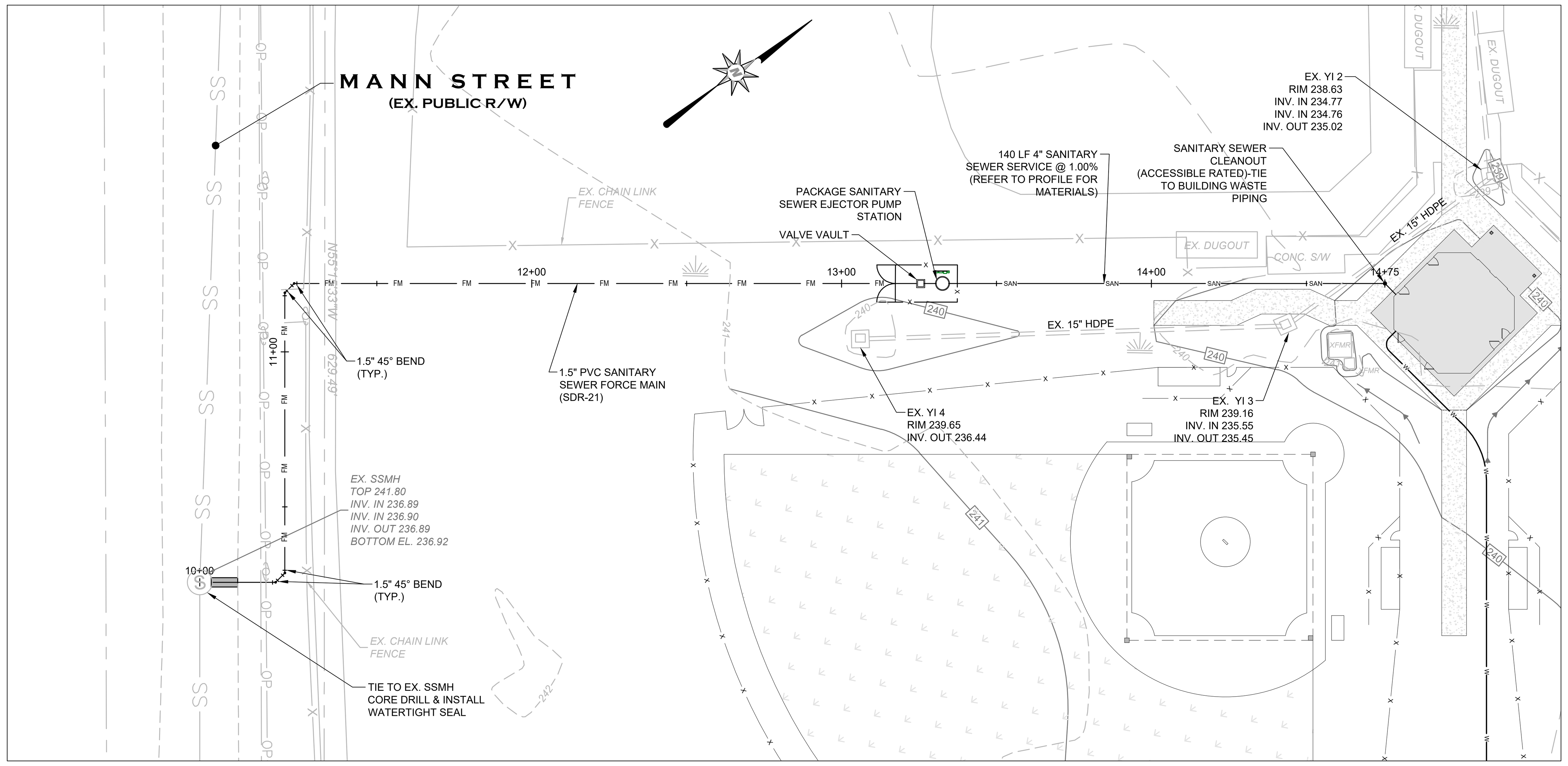
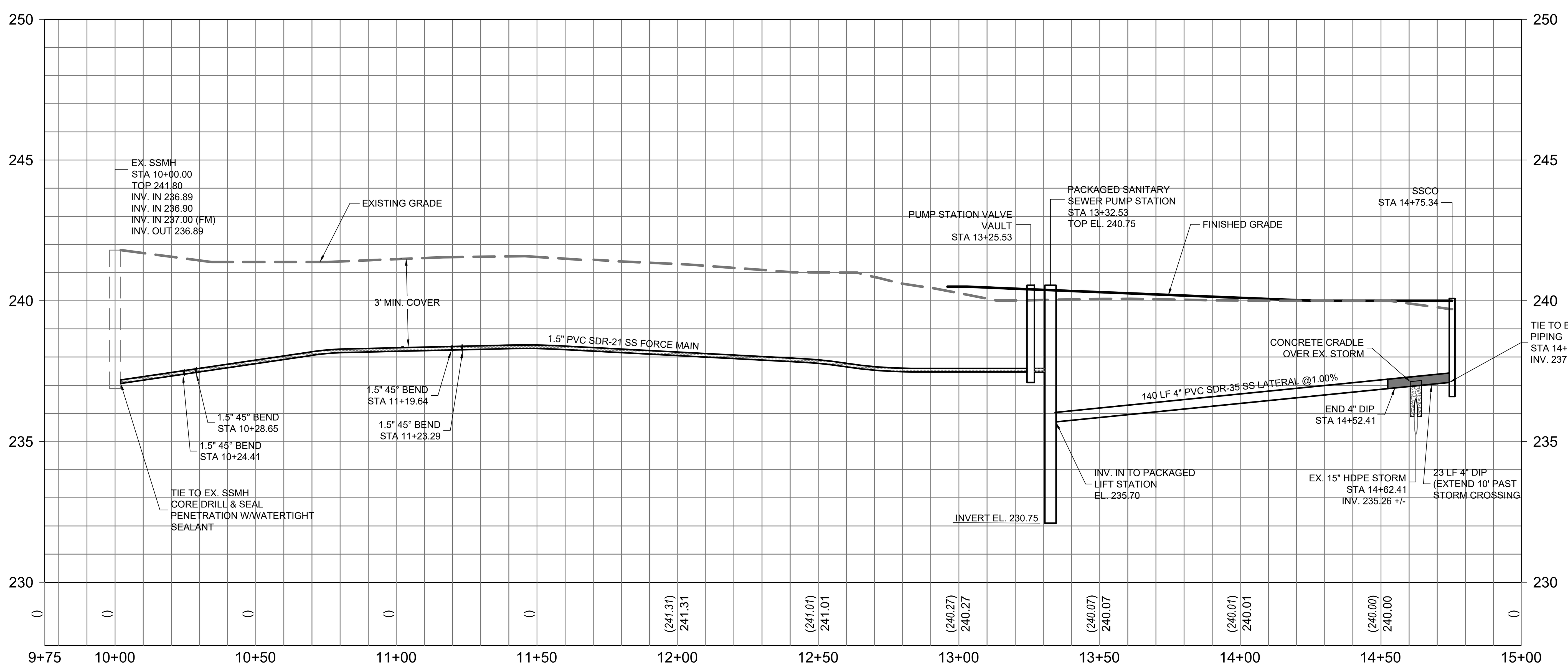


1 / C-15 SANITARY SEWER FORCE MAIN PLAN VIEW
STA 10+00-14+71
SCALE:1"=30'



2 / C-15 SANITARY SEWER FORCE MAIN PROFILE VIEW
STA 10+00-14+71
SCALE:1"=3'

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.

2. REFER TO EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION SEQUENCE BEFORE PERFORMING ANY CLEARING, GRUBBING, OR DEMOLITION OPERATIONS.

3. NO TITLE OPINION ON THIS PROPERTY HAS BEEN FURNISHED.

4. AREAS COMPUTED BY THE COORDINATE METHOD.

5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS, COVENANTS, AND RESTRICTIONS OF RECORD.

6. ALL DISTANCES SHOWN ON THE SURVEY ARE HORIZONTAL GROUND DISTANCES.

7. THE PROPERTY SHOWN IS LOCATED OUTSIDE OF ANY FLOOD HAZARD AREAS AS SHOWN ON FEMA FIRM 3720152800K DATED OCTOBER 3, 2006.

8. REFER TO SEALED TOPOGRAPHICAL SURVEY BY LAMBERT SURVEYING, INC. FOR HORIZONTAL AND VERTICAL DATUM INFORMATION AND OTHER SURVEY CONTROL DATA.

9. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS NOTED OTHERWISE.

10. CONTRACTOR SHALL FIELD LOCATE SPILL CURB AS NEEDED FOR PROPER DRAINAGE. SPILL CURB LOCATIONS ARE NOT INDICATED ON THIS PLAN.

11. COORDINATE POWER, TELEPHONE, CABLE, AND OTHER UNDERGROUND UTILITY INSTALLATION WITH THE APPROPRIATE UTILITY PROVIDER AND THE TOWN OF BENSON.

12. ALL PROPOSED SIGNAGE WILL COMPLY WITH THE TOWN OF BENSON SIGN ORDINANCE.

13. CONTRACTOR IS RESPONSIBLE FOR VERIFIYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.

14. MAXIMUM SIDEWALK CROSS SLOPE IS 2% (1/4 INCH PER FOOT).

15. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FDC POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN THE WATER METER AND ANY REQUIRED BACKFLOW PREVENTION DEVICES.

16. MAINTAIN A MINIMUM OF 3' COVER OVER ALL WATER PIPING.

17. ALL SANITARY SEWER CLEANOUTS IN PAVEMENT AREAS SHALL BE TRAFFIC RATED.

STANDARD UTILITY NOTES (AS APPLICABLE):

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH TOWN OF BENSON DESIGN STANDARDS, DETAILS, AND SPECIFICATIONS (2. UTILITY SEPARATION REQUIREMENTS:

a. A DISTANCE OF 100 FEET SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25 FEET FROM A PRIVATE WELL OR 50 FEET FROM A PUBLIC WELL.
b. WHEN INSTALLING WATER AND/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10 FEET. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER AND MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
c. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10 FEET ON EACH SIDE OF CROSSING MUST BE SPECIFIED AND INSTALLED TO WATERLINE SPECIFICATIONS.
d. 5 FEET MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER AND STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
e. MAINTAIN 18 INCH MIN. VERTICAL SEPARATION AT ALL WATERMAIN AND RCP STORM DRAIN CROSSINGS; MAINTAIN 24 INCH MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER AND RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS AND A CONCRETE CRADLE HAVING 6 INCHES MIN. CLEARANCE
f. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER AND SEWER FACILITIES WITH 18 INCH MIN. VERTICAL SEPARATION REQUIRED.

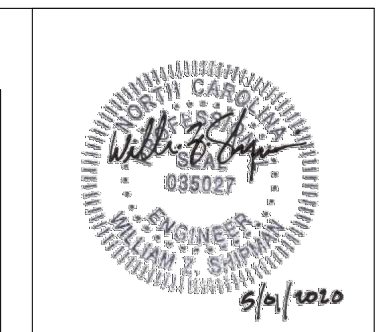
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW AND APPROVAL OF AN AMENDED PLAN AND/OR PROFILE BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER AND SEWER SERVICE TO EXISTING RESIDENCES AND BUSINESSES THROUGHOUT CONSTRUCTION OF THE PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS AND SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER AND SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE TOWN OF BENSON PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN AND REMOVAL OF SERVICE FROM ROW OR EASEMENT.
7. INSTALL 3/4 INCH COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANTS RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE.
8. INSTALL 4 INCH PVC* SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0 FEET ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE, AND/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND, AND/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT/RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. GREASE INTERCEPTOR/OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE TOWN OF BENSON PRIOR TO ISSUANCE OF A BUILDING PERMIT.
13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

UTILITY LEGEND

- FIRE HYDRANT ASSEMBLY
- GATE VALVE
- TEE
- THRUST (REACTION) BLOCKING
- BLOW OFF VALVE
- WATER METER
- BACKFLOW PREVENTER
- CLEANOUT
- SANITARY MANHOLE
- FLARED END SECTION
- RISER STRUCTURE
- CATCH BASIN
- YARD INLET
- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE

SCALE: 1 IN = 30 FT
30' 15' 0 30' 60'
SCALE IN FEET HORIZONTAL

3' 0 SCALE:1"=3'
SCALE IN FEET VERTICAL



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3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

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LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

SANITARY SEWER FORCE MAIN PLAN & PROFILE

SHEET NUMBER:
C-18

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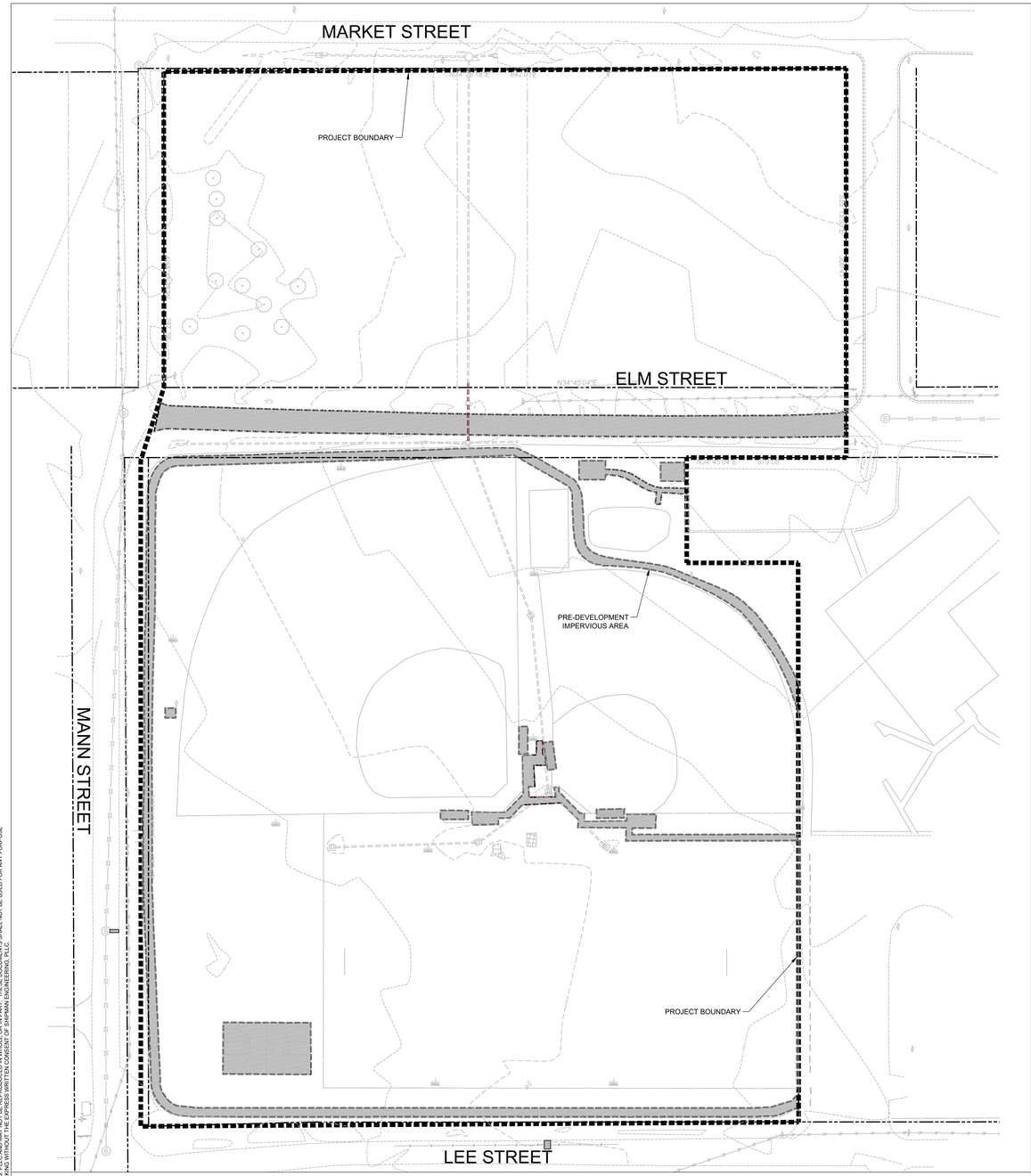
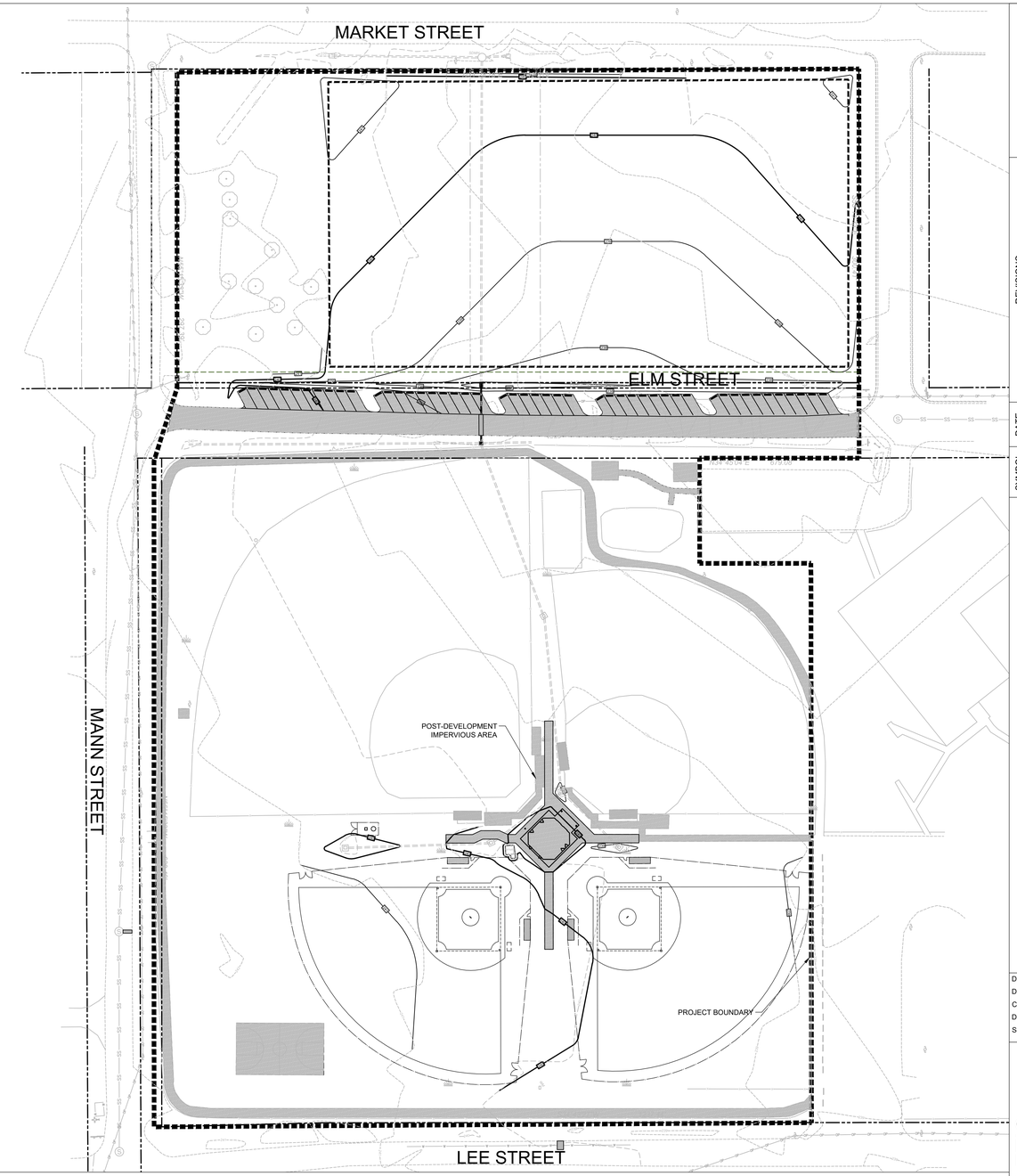


PRE-DEVELOPMENT IMPERVIOUS AREA

SCALE: 1" = 60'



POST-DEVELOPMENT IMPERVIOUS AREA

SCALE: 1" = 60'

RIVER BASIN:	NEUSE
WATERSHED:	UT OF HANNAH CREEK
LOCATED IN JOHNSTON COUNTY ESA?	NO
TOTAL PROJECT AREA:	612,800 SF
EXISTING IMPERVIOUS AREA:	38,429 SF
EXISTING IMPERVIOUS PERCENTAGE:	6.27%
PROPOSED IMPERVIOUS AREA:	53,789 SF
PROPOSED IMPERVIOUS PERCENTAGE:	8.77%
TOTAL NEW IMPERVIOUS AREA:	15,360 SF

(1) Type of Land Cover	(2) Area (acres)	(3) TN Export Coeff. (lbs/ac/yr)	(4) TN export from use (lbs/yr)
Permanently protected undisturbed open space (forest, un-mown meadow, etc.)		0.6	
Permanently protected managed open space (lawn, grass, landscaping, etc.)	559,011 SF (12.833 AC.)	1.2	15.40
Impervious surfaces (roads, parking lots, driveways, roofs, paved or graveled storage areas, etc.)	53,789 SF (1.23 AC.)	21.2	26.08
TOTALS	612,800 SF (14.068 AC.)		41.48

TOTAL NITROGEN EXPORT: 41.48 lbs/yr / 14.068 ac. = 2.95 lbs/ac/yr

SINCE TOTAL NITROGEN EXPORT IS LESS THAN 3.6 LBS/AC/YR, WE CONCLUDE NO STORMWATER TREATMENT IS REQUIRED.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

SCALE: 1 IN = 60 FT

60' 30' 0 60' 120'

SCALE IN FEET HORIZONTAL

Know what's below. Call before you dig.

NORTH CAROLINA 035027 ENGINEER WILLIAM Z. SHIPMAN

5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

SITE IMPERVIOUS AREA ANALYSIS

SHEET NUMBER: C-19

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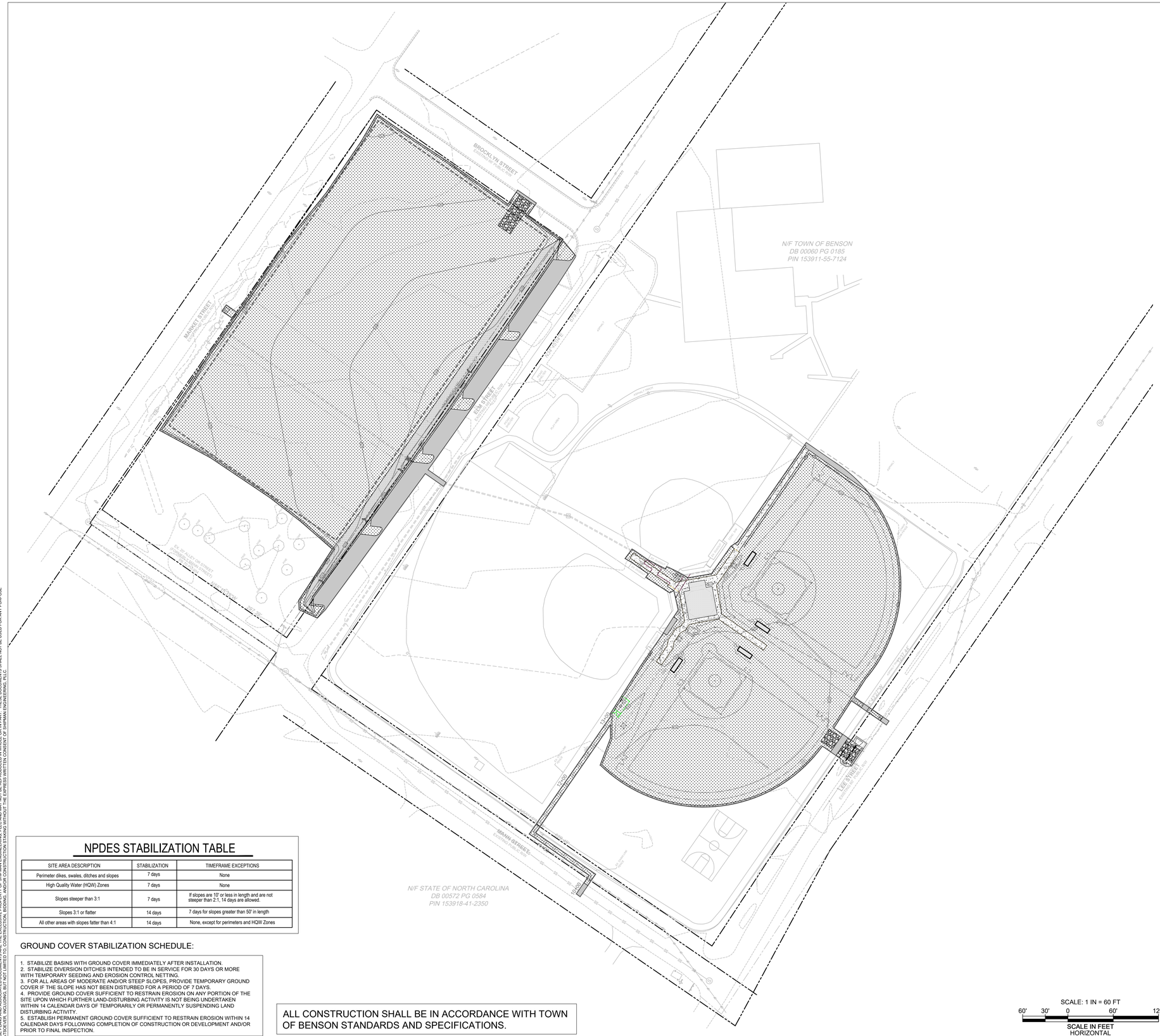

SITE PLAN NOTES:

1. BEFORE YOU DIG, STOP, CALL THE NC ONE-CALL CENTER AT 1-800-632-4949. IT'S THE LAW. EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE AND OTHER UTILITIES BEFORE STARTING CONSTRUCTION. NOTIFY UTILITY LOCATING COMPANY (ONE CALL @ 1-800-632-4949) OR INDIVIDUAL UTILITY OWNERS FOR UNDERGROUND LOCATIONS AT LEAST 48 HOURS IN ADVANCE.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF BENSON STANDARD SPECIFICATIONS AND DETAILS.
3. EXISTING CONDITIONS AND TOPOGRAPHICAL DATA OF THE SUBJECT PARCEL ARE COMPILED FROM A FIELD SURVEY OF THE PROPERTY BY LAMBERT SURVEYING, INC. (DATED APRIL 5, 2019) AND IS NOT THE RESULT OF A FIELD SURVEY BY SHIPMAN ENGINEERING, PLLC. ADDITIONAL EXISTING CONDITIONS DATA PROVIDED BY SUPPLEMENTAL DATA INCLUDING AERIAL PHOTOGRAPHY, JOHNSTON COUNTY GIS DATA, AND OTHER DATA SOURCES AS REQUIRED.
4. RIPARIAN BUFFER AREAS SHALL NOT BE CLEARED, DRAINAGE, OR OTHERWISE DISTURBED UNLESS SPECIFICALLY PERMITTED BY THE US ARMY CORPS OF ENGINEERS AND NCDENR-DWQ.
5. TREE PROTECTION FENCING SHALL BE PROVIDED ALONG ALL VEGETATED RIPARIAN AND VEGETATED PERIMETER BUFFER AREAS AS WELL AS TREE CONSERVATION AREAS.
6. PRIVATE UTILITIES (POWER, TELEPHONE, NATURAL GAS, CABLE TV) ARE NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THOSE UTILITIES WHEN INSTALLING STORM DRAINAGE TO AVOID CONFLICTS.
7. CUT/FILL SLOPES SHALL BE GRADED AT A MAXIMUM OF 3H:1V UNLESS OTHERWISE INDICATED.
8. NO GRADING EQUIPMENT SHALL BE PERMITTED ON-SITE UNTIL A GRADING PERMIT HAS BEEN ISSUED BY JOHNSTON COUNTY AND/OR NCDEQ DIVISION OF LAND QUALITY.
9. ALL RIP-RAP IS TO BE INSTALLED WITH NON-WOVEN FILTER FABRIC BENEATH (MIRAFI 140N OR APPROVED EQUAL).

STABILIZATION LEGEND

- ASPHALT PAVEMENT STABILIZATION
- BUILDING ROOF COVERAGE
- CONCRETE SIDEWALK
- SLOPES LESS THAN 4:1 (14 DAY STABILIZATION)
- DITCHES, SWALES, & SLOPES GREATER THAN 3:1 (7 DAY STABILIZATION)

NPDES STABILIZATION TABLE

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
All other areas with slopes fatter than 4:1	14 days	None, except for perimeters and HQW Zones

GROUND COVER STABILIZATION SCHEDULE:

1. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
2. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
3. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF 7 DAYS.
4. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN 14 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
5. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BENSON STANDARDS AND SPECIFICATIONS.

SCALE: 1 IN = 60 FT

60' 30' 0 60' 120'

SCALE IN FEET HORIZONTAL

811 Know what's below. Call before you dig.

EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE/EXIT
- SEDIMENT TRAP BOTTOM AREA
- RIP RAP FILTER DAM
- SILT FENCE OUTLET
- GRAVEL CHECK DAM
- TEMP. SEED/MULCH/PERM. SEED (TS, M, PS)
- OUTLET PROTECTION
- SKIMMER DEVICE W/ OUTLET PIPE
- INLET PROTECTION
- DIVERSION DITCH
- SILT FENCE
- TREE PROTECTION FENCE (TP)
- COIR MESH SEDIMENT BAFFLES
- DISTURBANCE LIMITS
- DRAINAGE AREA LIMITS
- DITCH LINER-ECX-2 EROSION CONTROL MAT
- DITCH LINER-ECSC-3 COCONUT TURF REINFORCEMENT MAT
- SLOPE MATTING-ECSC-3 COCONUT TURF REINFORCEMENT MAT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM T. SHIPMAN
5/6/2020

REVISIONS

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919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS

TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

NPDES STABILIZATION PLAN

SHEET NUMBER: C-20

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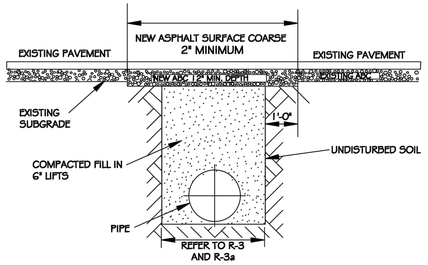


NOTES:

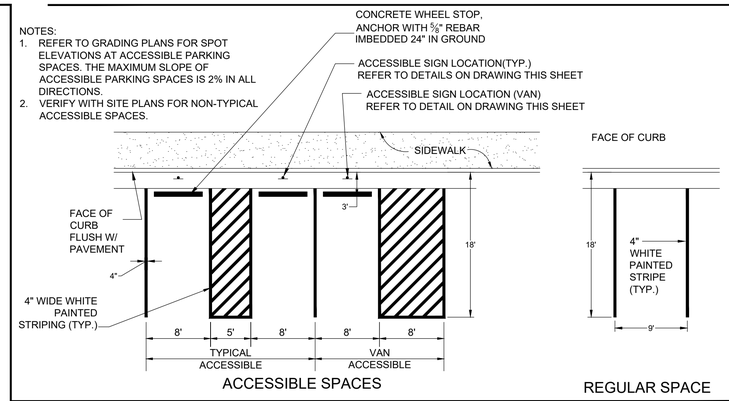
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROVED SAW CUT MACHINE.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
3. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT.
4. THE ENTIRE THICKNESS/ VERTICAL EDGE OF CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
7. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING, R-3 AND R-3A. FOR ADDITIONAL DETAILS.
8. NO HAND PATCHING ALLOWED.
9. PAVEMENT CUTS WITHING NCDOT ROW SHALL FONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

ASPHALT PAVEMENT PATCH DETAIL

NOT TO SCALE

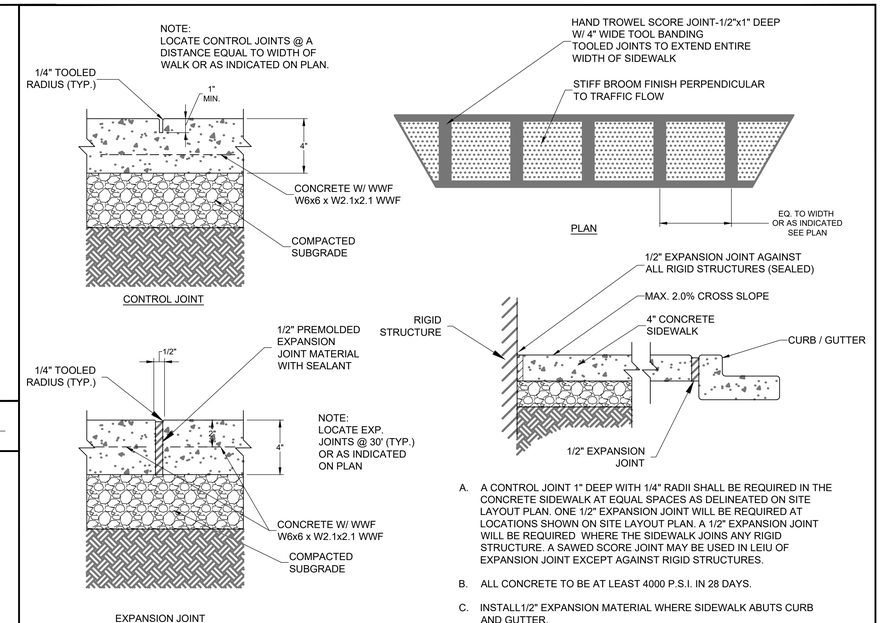
NOTES:

1. REFER TO GRADING PLANS FOR SPOT ELEVATIONS AT ACCESSIBLE PARKING SPACES. THE MAXIMUM SLOPE OF ACCESSIBLE PARKING SPACES IS 2% IN ALL DIRECTIONS.
2. VERIFY WITH SITE PLANS FOR NON-TYPICAL ACCESSIBLE SPACES.



PARKING SPACE STRIPING

NOT TO SCALE



A. A CONTROL JOINT 1" DEEP WITH 1/4" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT EQUAL SPACES AS DELINEATED ON SITE LAYOUT PLAN. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT LOCATIONS SHOWN ON SITE LAYOUT PLAN. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE. A SAWED SCORE JOINT MAY BE USED IN LEIU OF EXPANSION JOINT EXCEPT AGAINST RIGID STRUCTURES.

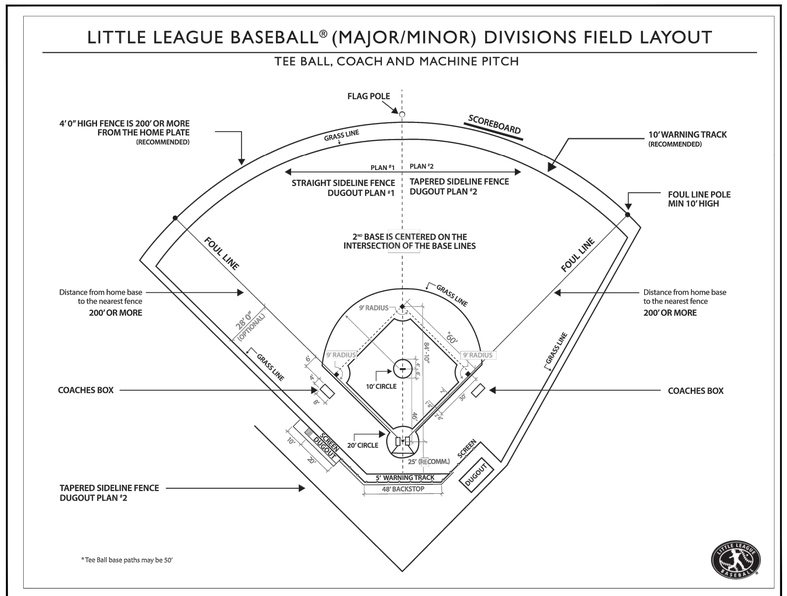
B. ALL CONCRETE TO BE AT LEAST 4000 P.S.I. IN 28 DAYS.

C. INSTALL1/2" EXPANSION MATERIAL WHERE SIDEWALK ABUTS CURB AND GUTTER.

D. CROSS SLOPE OF SIDEWALKS SHALL NOT EXCEED 2.0%.

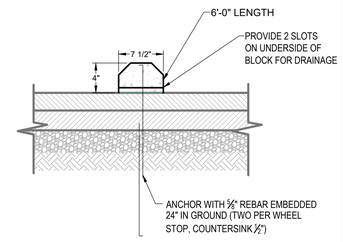
CONCRETE SIDEWALK

NOT TO SCALE



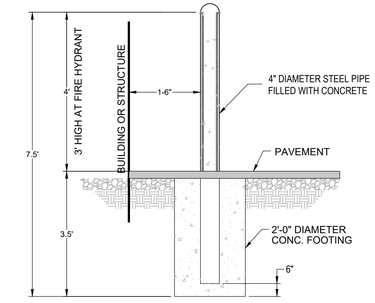
LITTLE LEAGUE BASEBALL FIELD LAYOUT DETAIL

NOT TO SCALE



PRE-CAST CONCRETE WHEEL STOP

NOT TO SCALE



CONCRETE PIPE BOLLARD

NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN, III
5/9/2020

REVISIONS

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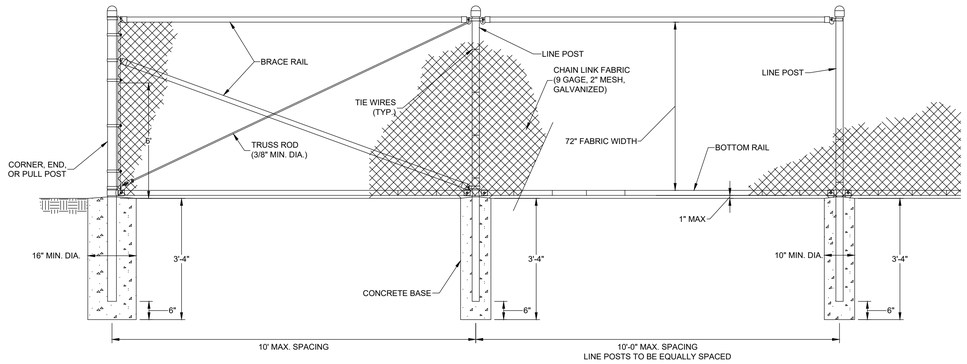
LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

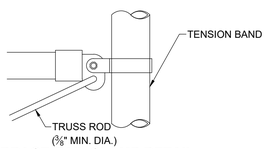
SITE DETAILS

SHEET NUMBER:
D-01

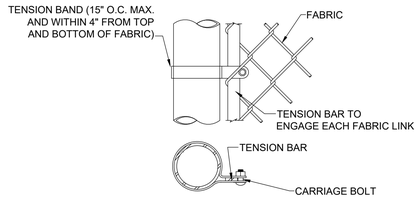


6' GALVANIZED CHAIN LINK FENCE DETAIL

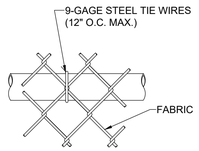
NO SCALE



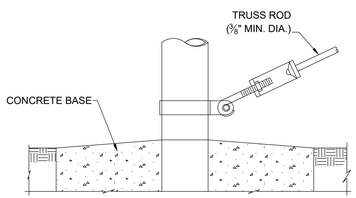
BRACE RAIL CLAMP DETAIL



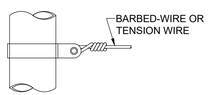
END OR GATE POST DETAIL



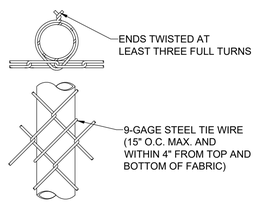
BRACE RAIL ATTACHMENT



TRUSS ROD AND BAND



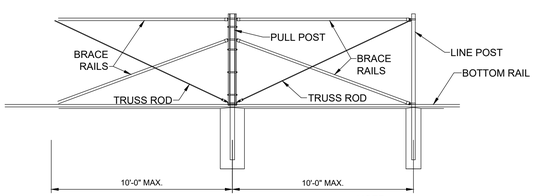
TENSION BAND DETAIL



LINE POST ATTACHMENTS

FASTENING DETAILS

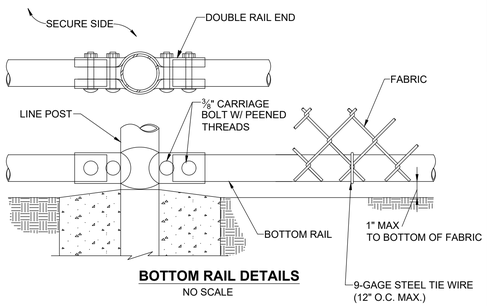
NO SCALE



BRACE PANEL DETAIL

NO SCALE

NOTE:
PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.



BOTTOM RAIL DETAILS

NO SCALE

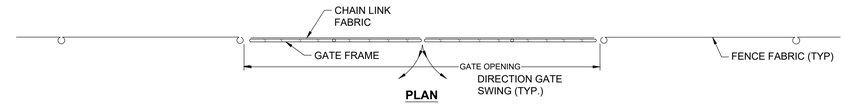
STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS			
TUBULAR - ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
LINE POSTS			
TUBULAR - ROUND	1.90" O.D.	2.375" O.D.	2.875" O.D.
BOTTOM & BRACE RAILS			
TUBULAR - ROUND	1.66" O.D.		
TUBULAR - SQUARE	1.50" SQ.		
H-SECTION	1.625" x 1.50"		
C-SECTION (ROLL-FORMED)	1.625" x 1.25"		

NOTES:

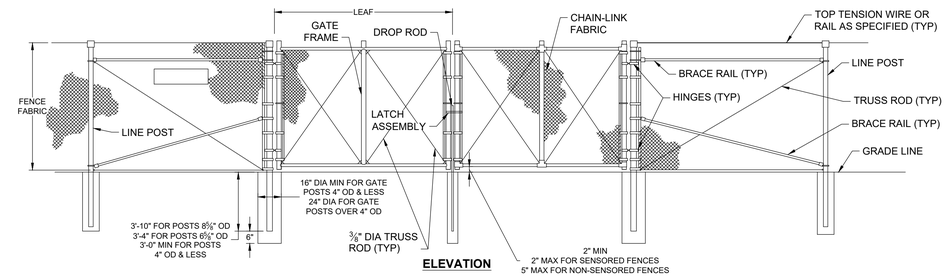
1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
2. ONLY 9-GAGE GALVANIZED STEEL TIE WIRES SHALL BE USED FOR FASTENING THE FENCE FABRIC TO FENCE POSTS AND RAILS. 16-GAGE, STAINLESS STEEL TIE WIRES SHALL BE USED FOR FASTENING FENCE FABRIC TO TENSION WIRES. HOG RINGS SHALL NOT BE ALLOWED ON SENSORED FENCES.
3. BOTTOM RAIL SHALL BE ATTACHED TO DOUBLE RAIL ENDS USING 3/8 " CARRIAGE BOLTS AS SHOWN. ADDITIONAL HOLES SHALL BE DRILLED THROUGH THE BOTTOM RAIL ENDS TO INSURE THAT CARRIAGE BOLTS PASS THROUGH THE BOTTOM RAIL AS SHOWN.

CHAIN-LINK FENCE DETAILS

NOT TO SCALE



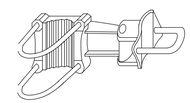
PLAN



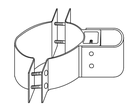
ELEVATION

DOUBLE SWING GATE

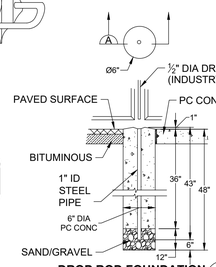
NO SCALE



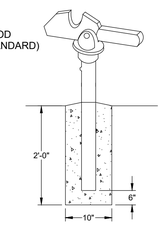
OFFSET HINGE



STANDARD HINGE

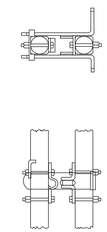


DROP ROD FOUNDATION A

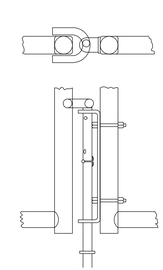


GATE KEEPER

(TO HOLD GATE OPEN)



LATCH ASSEMBLY



DROP ROD ASSEMBLY

GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' OR LESS	2.875" OD 2.5" SQ
GREATER THAN 6' TO 12'	4.0" OD
GREATER THAN 12' TO 18'	6.625" OD
MORE THAN 18'	8.625" OD

SWING GATE DETAILS

NO SCALE

NOTES:

1. FOR NON-SENSORED FENCES, DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.
2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F900 1.90" NOMINAL (ROUND) OR 2.00" NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL-WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.

CHAIN LINK ACCESS GATE DETAIL

NOT TO SCALE

NORTH CAROLINA 035027 ENGINEER WILLIAM T. SHIPMAN 5/6/2020

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

SITE DETAILS

SHEET NUMBER:
D-02

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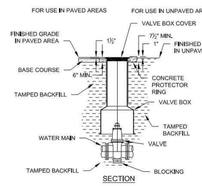
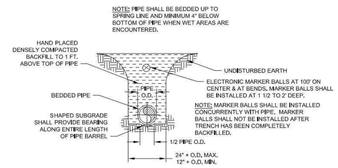


NOTES:
1. D.I.P. MAY BE USED FOR VALVE BOX EXTENSIONS.
2. VALVE BOX SHOULD NOT CONTACT WATER MAIN OR VALVE.
3. CONCRETE PROTECTOR RING SHALL BE USED IN ALL UNPAVED AREAS.
4. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

VALVE AND VALVE BOX INSTALLATION

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	WATER STANDARD DETAIL Valve and Valve Box Installation	PAGE 13

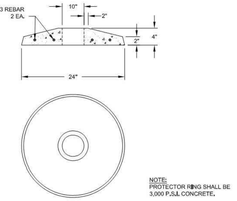


FORCE MAIN PIPE LAYING CONDITION "E"

PIPE LAYING CONDITION

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	SANITARY SEWER STANDARD DETAIL Pipe Laying Conditions E	PAGE 38

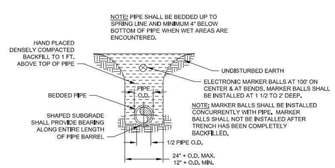


NOTE: PROTECTOR RING SHALL BE 3,000 P.S.I. CONCRETE.

CONCRETE PROTECTOR RING

NOT TO SCALE

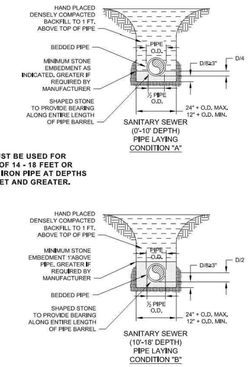
Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	WATER STANDARD DETAIL Concrete Protector Ring	PAGE 14



PIPE LAYING CONDITION

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	WATER STANDARD DETAIL Pipe Laying Condition	PAGE 17



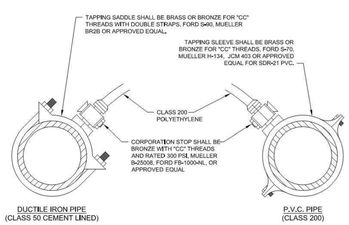
NOTE:
C-900 MUST BE USED FOR DEPTHS OF 14 - 18 FEET OR DUCTILE IRON PIPE AT DEPTHS OF 18 FEET AND GREATER.

PIPE LAYING CONDITIONS

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	SANITARY SEWER STANDARD DETAIL Pipe Laying Conditions A & B	PAGE 36

NOTES:
1. ALL TAPS 2" AND SMALLER SHALL BE MADE WITH TAPPING SADDLE. ALL TAPS LARGER THAN 2" SHALL BE MADE WITH TAPPING SLEEVE AND VALVE. NO DIRECT TAPS SHALL BE MADE.
2. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

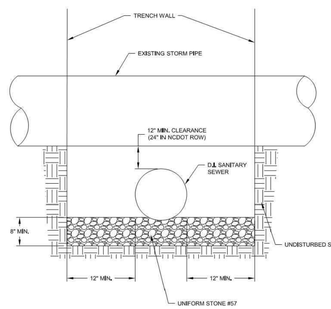


NOTES: ALL TAPS TO BE MADE ON TOP QUARTER OF MAIN.

STANDARD WATER TAP DETAIL

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	WATER STANDARD DETAIL Standard Water Tap	PAGE 20

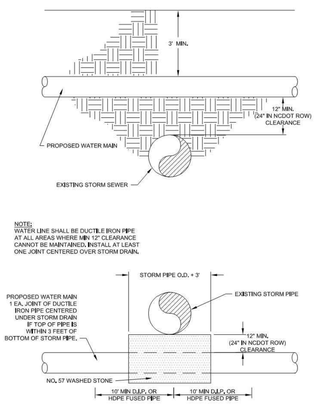


NOTE: DUCTILE IRON SHALL EXTEND FOR 10' ON EITHER SIDE OF THE STORM PIPE.

STORM SEWER CROSSING DETAILS

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	SANITARY SEWER STANDARD DETAIL Typical Storm Sewer Crossing	PAGE 40



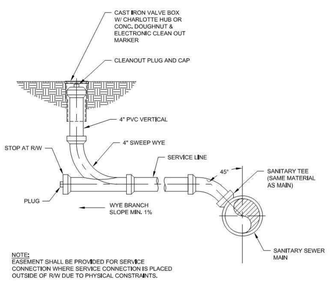
NOTE: WATER LINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE MIN 12" CLEARANCE CANNOT BE MAINTAINED. INSTALL AT LEAST ONE JOINT CENTERED OVER STORM DRAIN.

STORM SEWER CROSSING DETAILS

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	STANDARD WATER DETAIL Storm Sewer Crossing	PAGE 12

NOTE:
IN LIEU OF INSTALLING CAST IRON VALVE BOXES, CAPS CONTAINING LOCATE DEVICES CAN BE USED WITH A CONCRETE PROTECTOR RING.



NOTE: EASEMENT SHALL BE PROVIDED FOR SERVICE CONNECTION WHERE SERVICE CONNECTION IS PLACED OUTSIDE OF R/W DUE TO PHYSICAL CONSTRAINTS.

TYPICAL SEWER SERVICE CONNECTION

NOT TO SCALE

Drawn By: / Checked By: / Approved By: / Scale:	JOHNSTON COUNTY, Department of Public Utilities, P.O. Box 2283, Smithfield, NC 27577	SANITARY SEWER STANDARD DETAIL Typical Sewer Service Connection	PAGE 41

NORTH CAROLINA 035027 PROFESSIONAL ENGINEER WILLIAM E. SHIPMAN
5/8/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

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919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

NOTES AND DETAILS

SHEET NUMBER: D-03

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PERMANENT SEEDING

PREPARE SEEDBED BY RIPPING, CHISELING, HARROWING, OR PLOWING TO DEPTH OF 6 INCHES SO AS TO PRODUCE A LOOSE, FRIABLE SOIL SURFACE. REMOVE ALL STONES, ROCKS, BOULDERS, STUMPS, OR OTHER DEBRIS FROM THE SURFACE WHICH WILL PREVENT GERMINATION OR PLANT GROWTH.

INCORPORATE INTO THE SOIL 800-1000 LBS OF 10-10-10 FERTILIZER PLUS 500 LBS OF 20% SUPERPHOSPHATE PER ACRE AND TWO TONS OF DOLOMITIC LIME PER ACRE UNLESS SOIL TESTING INDICATES THAT A LOWER RATE OF LIME MAY BE USED.

MULCH AFTER SEEDING WITH 2 TONS OF GRAIN STRAW PER ACRE AND EITHER CRIMP STRAW INTO SOIL OR TACK WITH LIQUID ASPHALT AT 400 GALLONS PER ACRE OR EMULSIFIED ASPHALT AT 300 GALLONS PER ACRE. IF DISC BLADE/CRIMPING IS USED, APPLY 1/2 OF THE MULCH, THEN CRIMP, AND FINISH BY APPLYING THE OTHER 1/2 OF MULCH.

PERMANENT SEEDINGS:

PLANTS AND MIXTURE:	PLANTING RATE/ACRE:	PLANTING DATES:
TALL FESCUE JAPANESE CLOVER CHINESE LESPEDEZA (LOW MAINTENANCE SLOPE 3:1 OR LESS)	110 LBS/ACRE	AUGUST 15- OCTOBER 15 FEBRUARY 15- MAY 1
TALL FESCUE JAPANESE CLOVER CHINESE LESPEDEZA (LOW MAINTENANCE SLOPE 3:1 OR LESS)	140 LBS/ACRE	AUGUST 15- OCTOBER 15 FEBRUARY 15- MAY 1
BLEND OF TWO TURFTYPE TALL FESCUES (90%) AND TWO OF MORE IMPROVED KENTUCKY BLUEGRASS VARIETIES (10%) (GENERAL LAWN AREAS)	200 LBS/ACRE	AUGUST 15- OCTOBER 15 FEBRUARY 15- MAY 1

NOTE: FOR SPRING SEEDINGS, USE SCARIFIED LESPEDEZA SEED. FOR LATE FALL AND WINTER SEEDINGS, USE UNSCARIFIED SEED.

TEMPORARY SEEDING (PIEDMONT REGION)-LATE WINTER/EARLY SPRING

SEEDING MIXTURE:

SPECIES:	RATE (LB/ACRE)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

SEEDING DATES:

MOUNTAINS: ABOVE 2500 FEET- FEBRUARY 15- MAY 15
BELOW 2500 FEET- FEBRUARY 1- MAY 1

PIEDMONT: JANUARY 1- MAY 1

COASTAL PLAIN: DECEMBER 1- APRIL 15

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LBS/ACRE OF GROUND AGRICULTURAL LIMESTONE AND 750 LBS/ACRE OF 10-10-10 FERTILIZER.

MULCH: APPLY 4,000 LBS/ACRE OF STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TEMPORARY SEEDING (PIEDMONT REGION)-FALL

SEEDING MIXTURE:

SPECIES:	RATE (LB/ACRE)
RYE (GRAIN)	120

SEEDING DATES:

MOUNTAINS: AUGUST 15- DECEMBER 15

COASTAL PLAIN & PIEDMONT: AUGUST 15- DECEMBER 30

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LBS/ACRE OF GROUND AGRICULTURAL LIMESTONE AND 1,000 LBS/ACRE OF 10-10-10 FERTILIZER.

MULCH: APPLY 4,000 LBS/ACRE OF STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LBS/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LBS/ACRE KOBE (PIEDMOND AND COASTAL PLAIN) OR KOREAN (MOUNTAIN) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING (PIEDMONT REGION)-SUMMER

SEEDING MIXTURE:

SPECIES:	RATE (LB/ACRE)
GERMAN MILLET	40

IN PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LBS/ACRE.

SEEDING DATES:

MOUNTAINS: MAY 15- AUGUST 15

PIEDMONT: MAY 1- AUGUST 15

COASTAL PLAIN: APRIL 15- AUGUST 15

SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LBS/ACRE OF GROUND AGRICULTURAL LIMESTONE AND 750 LBS/ACRE OF 10-10-10 FERTILIZER.

MULCH: APPLY 4,000 LBS/ACRE OF STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

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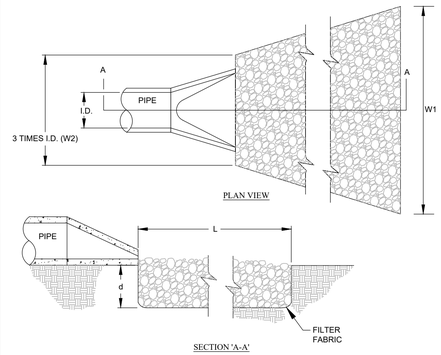
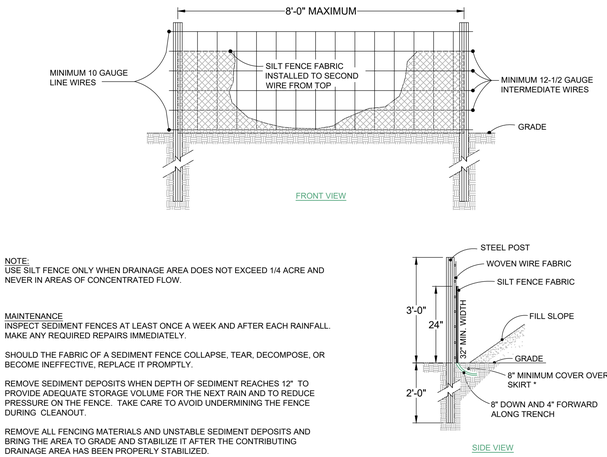


NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
4. MAINTAIN ENERGY DISSIPATERS INSTALLED DURING EARLY SITE WORK THROUGHOUT THE CONSTRUCTION AREA.

MAINTENANCE
RIP RAP SHOULD BE INSPECTED PERIODICALLY FOR SCOUR OR DISLODGED STONES. CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

PIPE OUTLET TO FLAT AREA (NCDENR 6.15)-NO WELL DEFINED CHANNEL
NOT TO SCALE



NOTE:
USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.

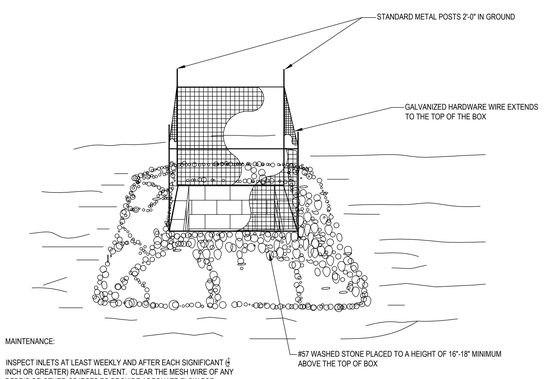
MAINTENANCE
INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS WHEN DEPTH OF SEDIMENT REACHES 12" TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

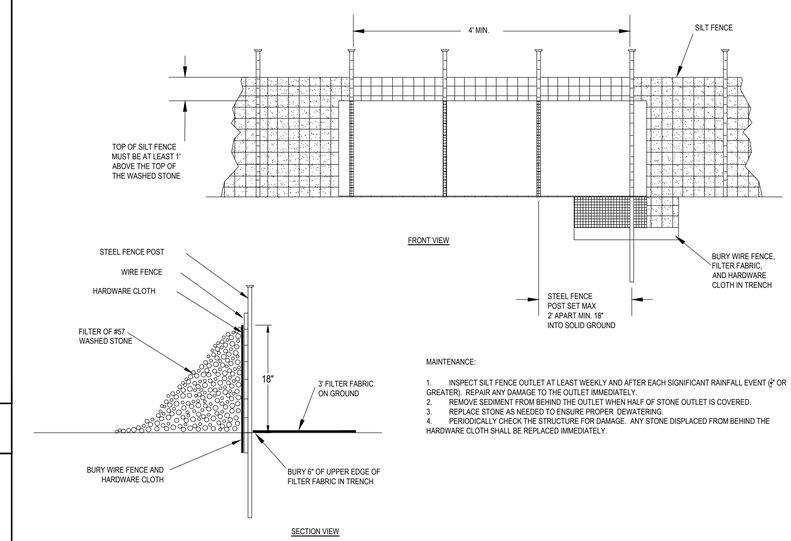
SILT FENCE (NCDENR 6.62)
NOT TO SCALE



MAINTENANCE:

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

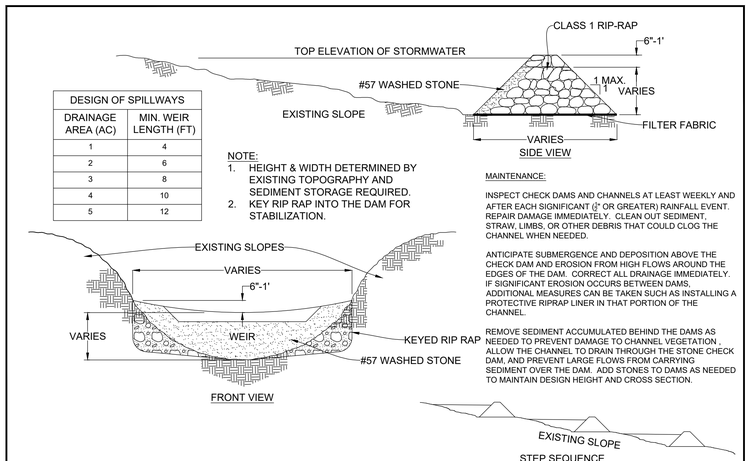
HARDWARE CLOTH & GRAVEL INLET PROTECTION
NOT TO SCALE



MAINTENANCE:

1. INSPECT SILT FENCE OUTLET AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (½" OR GREATER). REPAIR ANY DAMAGE TO THE OUTLET IMMEDIATELY.
2. REMOVE SEDIMENT FROM BEHIND THE OUTLET WHEN HALF OF STONE OUTLET IS COVERED.
3. REPLACE STONE AS NEEDED TO ENSURE PROPER DEWATERING.
4. PERIODICALLY CHECK THE STRUCTURE FOR DAMAGE. ANY STONE DISPLACED FROM BEHIND THE HARDWARE CLOTH SHALL BE REPLACED IMMEDIATELY.

SILT FENCE OUTLET (NCDENR 6.62)
NOT TO SCALE



DESIGN OF SPILLWAYS	
DRAINAGE AREA (AC)	MIN. WEIR LENGTH (FT)
1	4
2	6
3	8
4	10
5	12

NOTE:
1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO THE DAM FOR STABILIZATION.

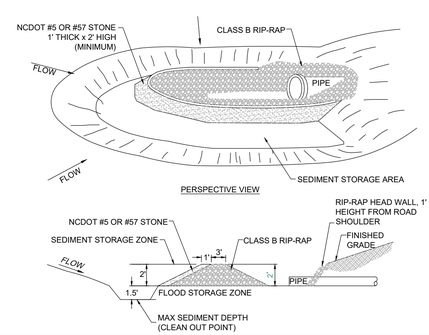
MAINTENANCE:

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT. REPAIR DAMAGE IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.

ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DRAINAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.

REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

CHECK DAM
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL.
2. INSTALL THE CLASS B OR CLASS I RIPRAP IN A SEMI-CIRCLE AROUND THE PIPE INLET. THE STONE SHOULD BE BUILT UP HIGHER ON EACH END WHERE IT TIES INTO THE EMBANKMENT. THE MINIMUM CREST WIDTH OF THE RIP-RAP SHOULD BE 3 FEET, WITH A MINIMUM BOTTOM WIDTH OF 11 FEET. THE MINIMUM HEIGHT SHOULD BE 2 FEET, BUT ALSO 1 FOOT LOWER THAN THE SHOULDER OF THE EMBANKMENT OR DIVERSIONS.
3. A 1 FOOT THICK LAYER OF NC DOT #5 OR #57 STONE SHOULD BE PLACED ON THE OUTSIDE SLOPE OF THE RIPRAP.
4. THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED AROUND THE OUTSIDE OF THE STONE HORSESHOE 18 INCHES BELOW NATURAL GRADE.
5. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, FILL DEPRESSION AND ESTABLISH FINAL GRADING ELEVATIONS, COMPACT AREA PROPERLY, AND STABILIZE WITH GROUND COVER.

MAINTENANCE:

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.

AFTER ALL THE SEDIMENT AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

RIP RAP FILTER DAM INLET PROTECTION (NCDENR 6.55)
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN
5/8/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

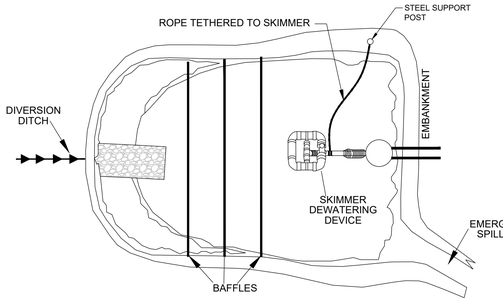
SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

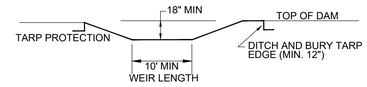
LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

NOTES AND DETAILS

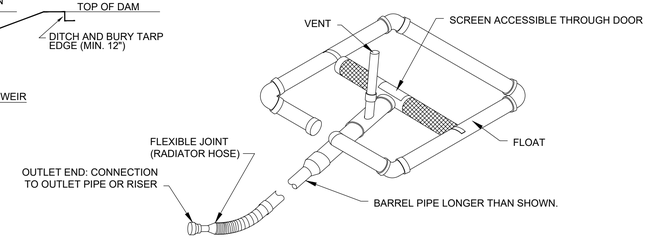
SHEET NUMBER:
D-04



PLAN VIEW



SECTION THRU WEIR



NOTES
BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE SEDIMENT STORAGE ZONE IS HALF-FULL OR EVERY 90 DAYS WHICHEVER COMES FIRST.

THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.

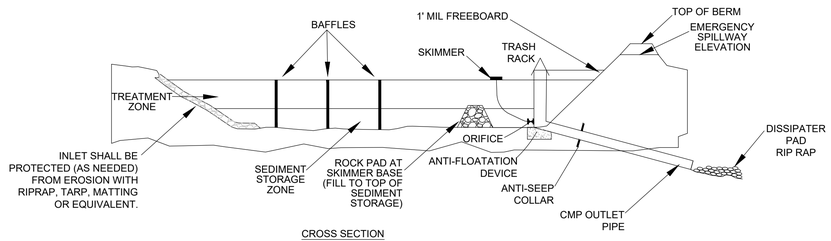
PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.

BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.

MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.

DURING THE CONSTRUCTION PHASE OF THE PROJECT, RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.

POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.



CROSS SECTION

MAINTENANCE
INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS.

MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

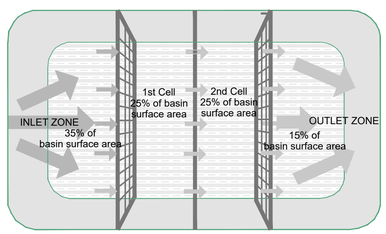
IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASING, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.

IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

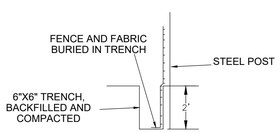
CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

SEDIMENT BASIN WITH STANDARD SKIMMER (NCDENR 6.61)
NOT TO SCALE



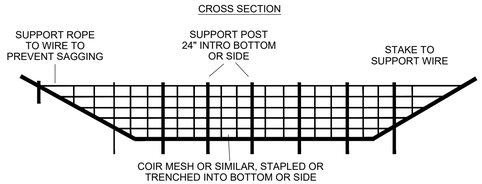
PLAN VIEW

NOTES:
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS
6. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL



SECTION VIEW AT OPENING

CROSS SECTION



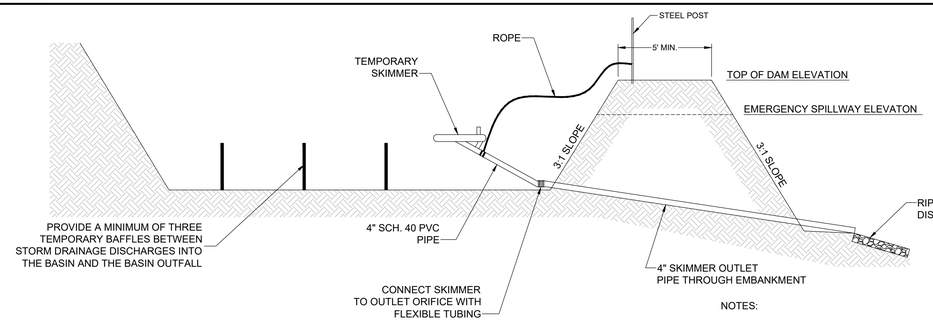
MAINTENANCE
INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

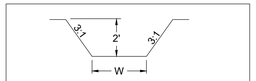
BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.

REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

COIR MESH SEDIMENT BAFFLES DETAIL (NCDENR 6.65)
NOT TO SCALE





AT ENTRANCE (CREST) OF SPILLWAY

EMERGENCY SPILLWAY DETAIL
NO SCALE

BASIN VOLUMES PROVIDED ARE BASED ON AVAILABLE VOLUME AT THE PRINCIPAL SPILLWAY
BASIN SIDES AND WEIR SHALL HAVE MAXIMUM SLOPES OF 3:1 OR FLATTER DIMENSIONS SHOWN ARE AT WEIR ELEVATION OF BASIN

NOTES:

1. PROVIDE 3 BAFFLES (USE 2 IF LESS THAN 20 FEET IN LENGTH).
2. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
3. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.
6. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL.
7. BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF FULL.

SEDIMENT TRAP WITH STANDARD SKIMMER (NCDENR 6.61)
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM E. SHIPMAN
5/6/2020

REVISIONS

SYMBOL	DATE	
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

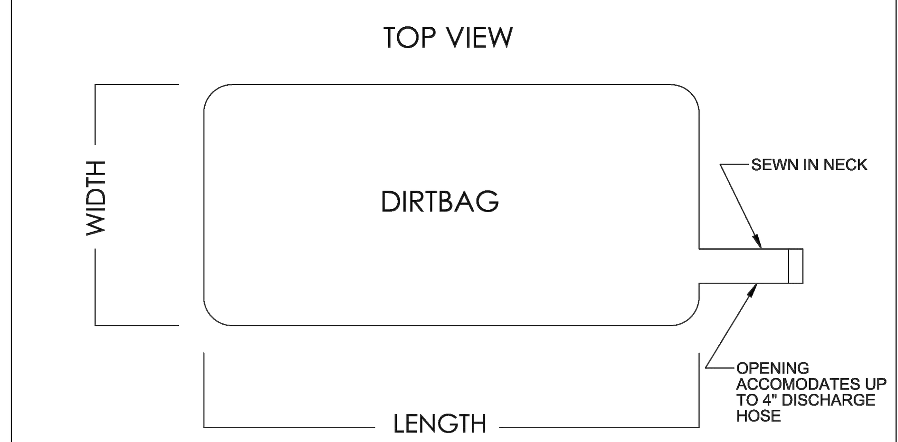
DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

NOTES AND DETAILS

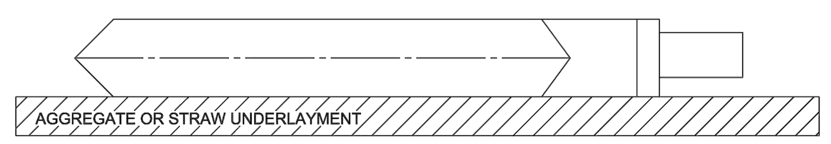
SHEET NUMBER:
D-05

THESE PLANS AND ASSOCIATED DOCUMENTS ARE THE EXCLUSIVE PROPERTY OF SHIPMAN ENGINEERING, PLLC AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART. THESE DOCUMENTS SHALL NOT BE USED FOR ANY PURPOSE WITH PERSONS, PROJECTS OR ENTITIES TO CONSTRUCTION, OWNERSHIP AND OPERATION OF THE PROJECT WITHOUT THE EXPRESS WRITTEN CONSENT OF SHIPMAN ENGINEERING, PLLC.



NOTES:
1) DIRTBAG TO BE PLACED ON AGGREGATE OR STRAW
2) SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS
3) SEAM MUST BE TESTED UNDER ASTM D-4884. ACF TEST RESULTS AVAILABLE UPON REQUEST

CROSS SECTION



DB55 FABRIC PROPERTIES		
PROPERTY	TEST METHOD	MARV
TENSILE STRENGTH	ASTM D-4632	205 LBS
ELONGATION	ASTM D-4632	50%
CBR PUNCTURE	ASTM D-6241	525 LBS
UV RESISTANCE	ASTM D-4355	70%
AOS	ASTM D-4751	80 US SIEVE
PERMITTIVITY	ASTM D-4491	1.4 SEC-1
FLOW RATE	ASTM D-4491	90 GPM/SF

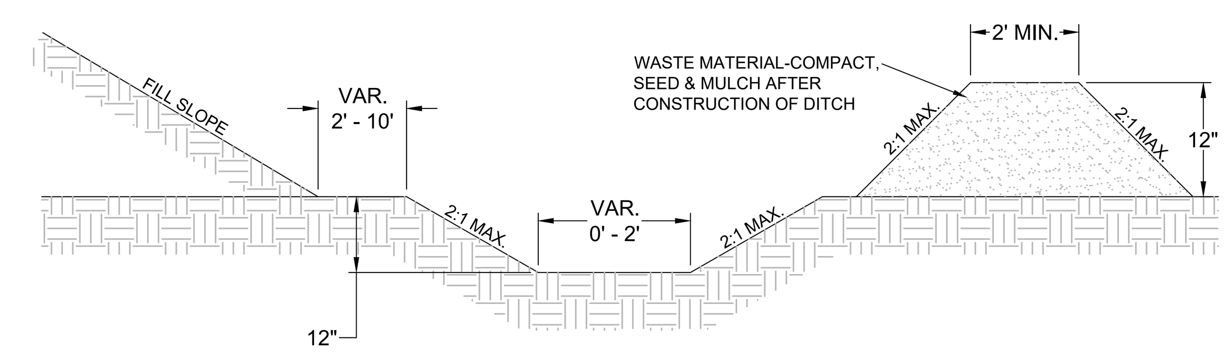
CORPORATE OFFICE:
2831 CARDWELL ROAD
RICHMOND, VA 23234
PH: 800-448-3636
WWW.ACFENVIRONMENTAL.COM

ACF DB55 DIRTBAG

FOR ADDITIONAL INFORMATION PLEASE CONTACT ACF ENVIRONMENTAL
PH: 800-448-3636 / WWW.ACFENVIRONMENTAL.COM

NOTES:

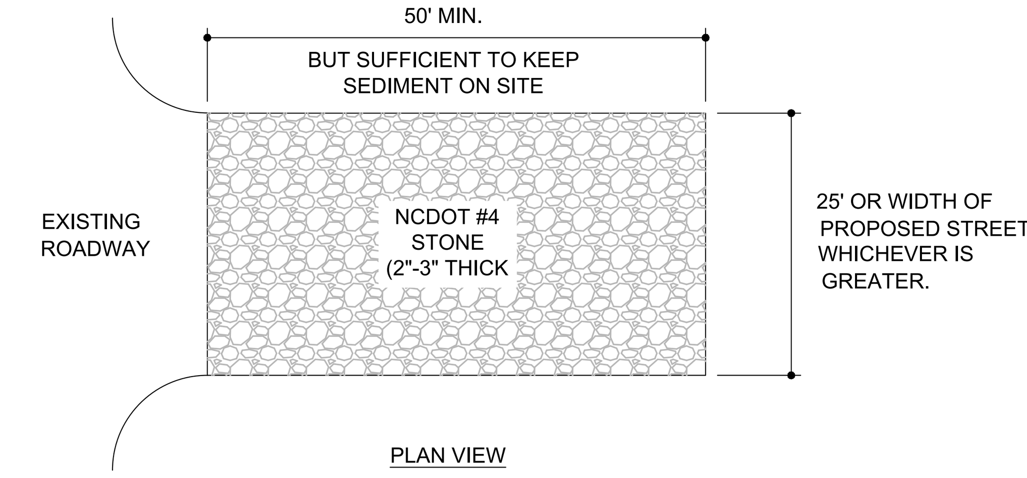
1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.



CROSS SECTIONAL VIEW

MAINTENANCE
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

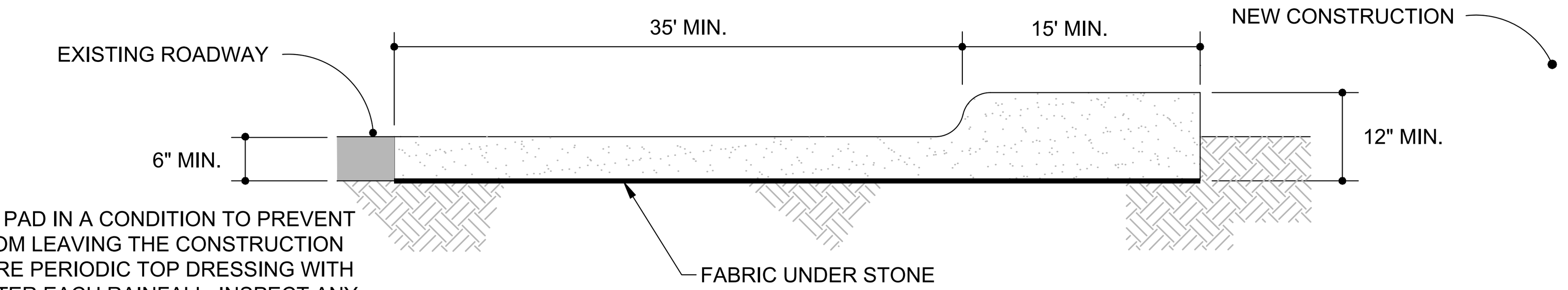
DIVERSION DITCH (NCDENR 6.20)
NOT TO SCALE



PLAN VIEW

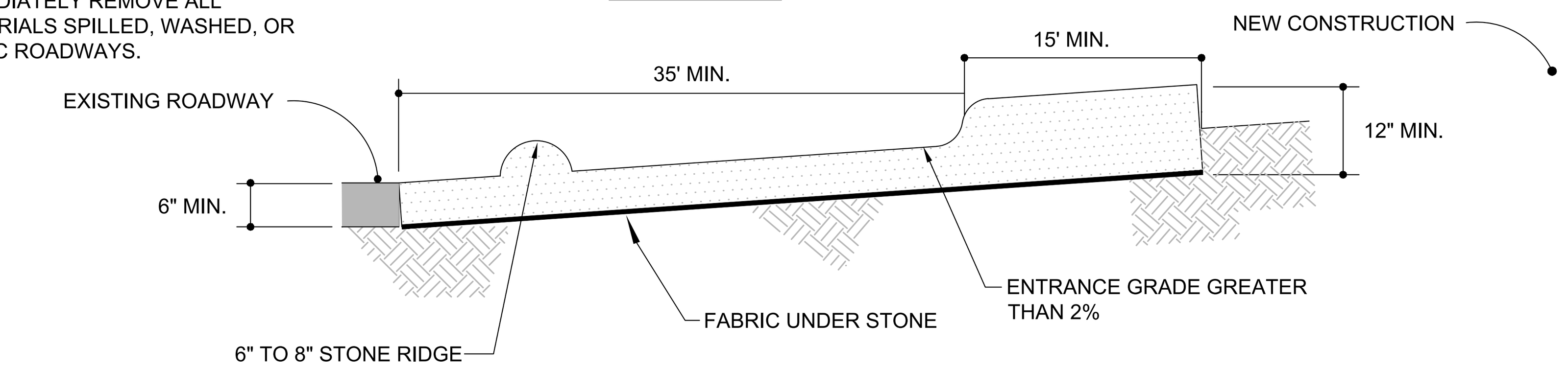
NOTES:

1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT-LADEN STONE AND REPLACEMENT WITH FRESH STONE.



MAINTENANCE
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH TWO-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

CROSS SECTION



TEMPORARY CONSTRUCTION ENTRANCE (NCDENR 6.06)
NOT TO SCALE

Channel Installation
Instructions EXCEL SS-2 ™
All Natural

Step 1 - Site Preparation

Prepare site to design profile and grade. Remove debris, rocks, clods, etc.. Ground surface should be smooth prior to installation to ensure blanket remains in contact with slope.

Step 2 - Seeding

Seeding of site should be conducted to design requirements or to follow local or state seeding requirements as necessary.

Stap 3 - Staple Selection

At a minimum, 6 in. long by 1 in. crown, 11 gauge staples are to be used to secure the blanket to the ground surface. Installation in rocky, sandy or other loose soil may require longer staples.

Step 4 - Excavate Anchor Trench and Secure Blanket

Excavate a trench along the top of the channel side slopes and the upstream terminal end of the channel to secure the edges of the blanket. The trench should run along the length and width of the installation, be 6 in. wide and 6 in. deep. Staple blanket along bottom of trench, fill with compacted soil, overlap blanket towards toe of slope and secure with row of staples (shown in Figures A, E and F).

Step 5 - Secure Body of Blanket

Roll blanket down slope from anchor trench. Staple body of blanket following the pattern shown in Figure D. Leave end of blanket unstapled to allow for overlap shown in Figure B. Place downstream blanket underneath upstream blanket to form shingle pattern. Staple seam as shown in Figure E. Secure downstream blanket with stapling pattern shown in Figure D. Stapling pattern shown in Figure D reflects minimum staples to be used. More staples may be required to ensure blanket is sufficiently secured to resist mowers and foot traffic and to ensure blanket is in contact with soil surface over the entire area of blanket. Further, critical points require additional staples. Critical points are identified in Figure G.

Step 6 - Continue Along Slope - Complete Installation

Overlap adjacent blankets as shown in Figure C and repeat Step 5. Secure toe of slope using stapling pattern shown in Figure E. Secure edges of installation by stapling at 1.0' intervals along the terminal edge.

*** Drawings Not to Scale**

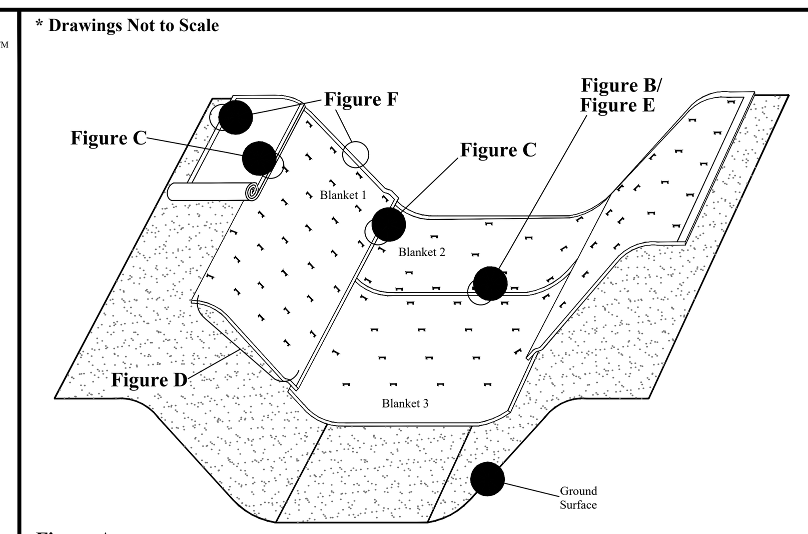


Figure A

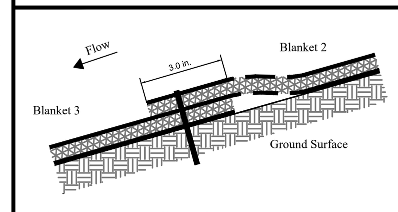


Figure B - Profile View

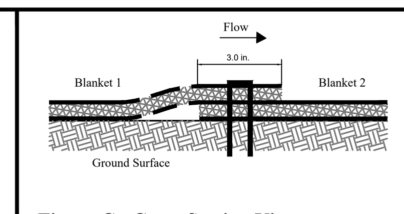


Figure C - Cross Section View

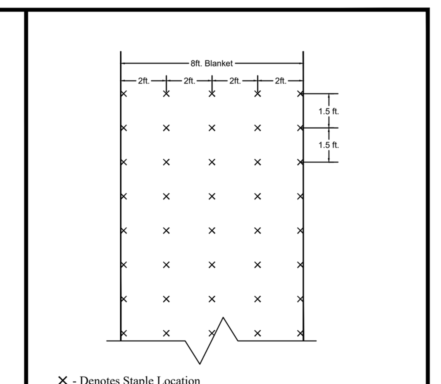


Figure D - Plan View

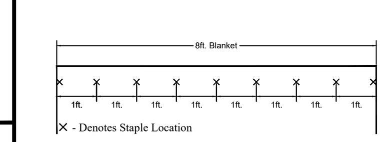


Figure E - Plan View

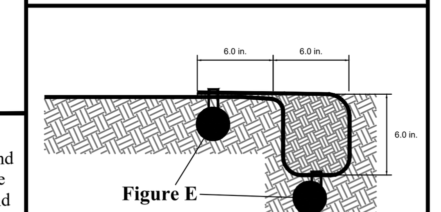


Figure F - Profile View

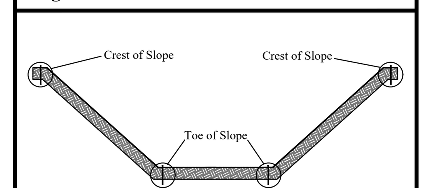


Figure G - Critical Point Securing

Product Application/Equivalency Specifications

Excel SS-2 All Natural is produced by Western Excelsior and consists of a temporary Rolled Erosion Control Product (RECP) comprised of a 100% certified weed free agricultural straw matrix mechanically (stitch) bound between two, biodegradable jute/scrim nets (top and bottom). The expected longevity of Excel SS-2 All Natural is approximately 12 months (actual longevity dependent on field and climatic conditions). Excel SS-2 All Natural is manufactured to include physical properties sufficient to provide the intended longevity and performance. Product specifications may be found on document WE_EXCEL_SS2AN_SPEC and performance information may be found on document WE_EXCEL_SS2AN_PERF. All documents are available from Western Excelsior Technical Support or www.westernexcelsior.com. Additional to above, equivalent products to Excel SS-2 All Natural must meet identical criteria as Excel SS-2 All Natural as follows:

1. Consist of debris free and 100% certified weed free agricultural straw bound between two, biodegradable jute/scrim nets.
2. Sufficient tensile strength, thickness and coverage to maintain integrity during installation and ensure material performance.
3. Listing within AASHTO NTPEP database.
4. Meet ECTC specification for category 2D products.

Document # WE_EXCEL_SS2AN_CII

Slope Installation
Instructions EXCEL SS-2 ™
All Natural

Step 1 - Site Preparation

Prepare site to design profile and grade. Remove debris, rocks, clods, etc.. Ground surface should be smooth prior to installation to ensure blanket remains in contact with slope.

Step 2 - Seeding

Seeding of site should be conducted to design requirements or to follow local or state seeding requirements as necessary.

Stap 3 - Staple Selection

At a minimum, 6 in. long by 1 in. crown, 11 gauge staples are to be used to secure the blanket to the ground surface. Installation in rocky, sandy or other loose soil may require longer staples.

Step 4 - Excavate Anchor Trench and Secure Blanket

Excavate a trench along the top of the slope to secure the upstream end of the blanket. The trench should run along the length of the installation, be 6 in. wide and 6 in. deep. Staple blanket along bottom of trench, fill with compacted soil, overlap blanket towards toe of slope and secure with row of staples (shown in Figures A, E and F).

Step 5 - Secure Body of Blanket

Roll blanket down slope from anchor trench. Staple body of blanket following the pattern shown in Figure D. Leave end of blanket unstapled to allow for overlap shown in Figure B. Place downstream blanket underneath upstream blanket to form shingle pattern. Staple seam as shown in Figure E. Secure downstream blanket with stapling pattern shown in Figure D. Stapling pattern shown in Figure D reflects minimum staples to be used. More staples may be required to ensure blanket is sufficiently secured to resist mowers and foot traffic and to ensure blanket is in contact with soil surface over the entire area of blanket. Further, critical points require additional staples. Critical points are identified in Figure G.

Step 6 - Continue Along Slope - Complete Installation

Overlap adjacent blankets as shown in Figure C and repeat Step 5. Secure toe of slope using stapling pattern shown in Figure E. Secure edges of installation by stapling at 1.0' intervals along the terminal edge.

*** Drawings Not to Scale**

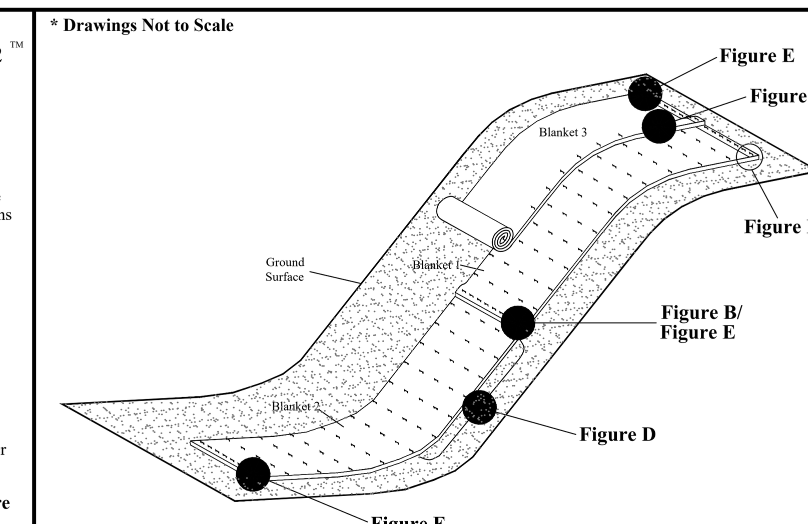


Figure A

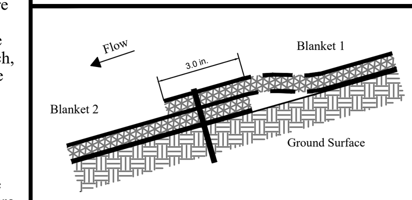


Figure B - Profile View

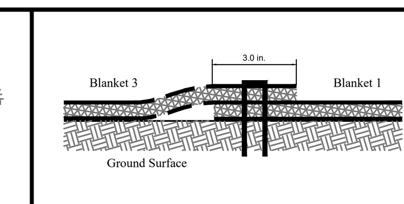


Figure C - Cross Section View

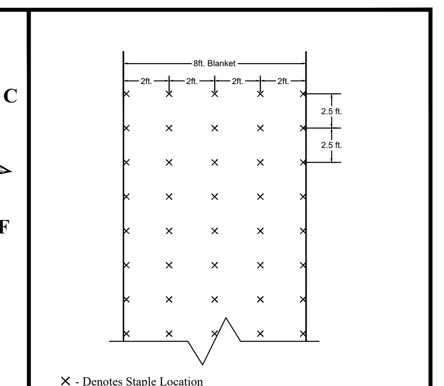


Figure D - Plan View

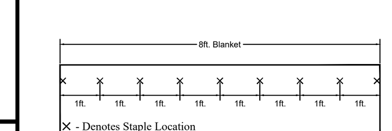


Figure E - Plan View

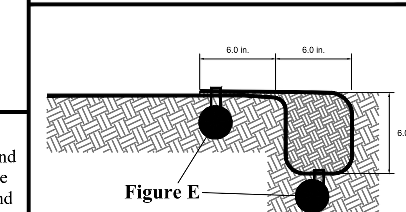


Figure F - Profile View

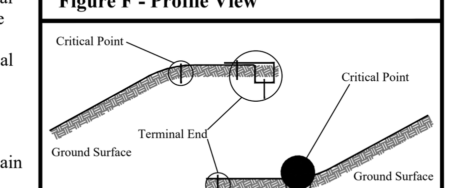


Figure G - Critical Point Securing

Product Application/Equivalency Specifications

Excel SS-2 All Natural is produced by Western Excelsior and consists of a temporary Rolled Erosion Control Product (RECP) comprised of a 100% certified weed free agricultural straw matrix mechanically (stitch) bound between two, biodegradable jute/scrim nets (top and bottom). The expected longevity of Excel SS-2 All Natural is approximately 12 months (actual longevity dependent on field and climatic conditions). Excel SS-2 All Natural is manufactured to include physical properties sufficient to provide the intended longevity and performance. Product specifications may be found on document WE_EXCEL_SS2AN_SPEC and performance information may be found on document WE_EXCEL_SS2AN_PERF. All documents are available from Western Excelsior Technical Support or www.westernexcelsior.com. Additional to above, equivalent products to Excel SS-2 All Natural must meet identical criteria as Excel SS-2 All Natural as follows:

1. Consist of debris free and 100% certified weed free agricultural straw bound between two, biodegradable jute/scrim nets.
2. Sufficient tensile strength, thickness and coverage to maintain integrity during installation and ensure material performance.
3. Listing within AASHTO NTPEP database.
4. Meet ECTC specification for category 2D products.

Document # WE_EXCEL_SS2AN_SII

SYMBOL	DATE	REVISIONS
1	03-12-2020	PER NCDEQ EROSION CONTROL COMMENTS
2	04-7-2020	PER DWQ STORMWATER COMMENTS
3	05-01-2020	ADDITION OF PROJECT PHASING PLANS

SHIPMAN ENGINEERING
SHIPMAN ENGINEERING, PLLC
NCBELS LICENSE P-1963
137 MIDDLEGREEN PLACE
HOLLY SPRINGS, NC 27540
919.900.0006

DESIGNED BY: WZS
DRAWN BY: WZS
CHECKED BY: WZS
DRAWING DATE: 07-11-19
SE PROJECT #: 2019-017

LEE STREET ATHLETIC COMPLEX IMPROVEMENTS
TOWN OF BENSON
JOHNSTON COUNTY, NORTH CAROLINA

NOTES AND DETAILS

SHEET NUMBER:
D-06

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GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

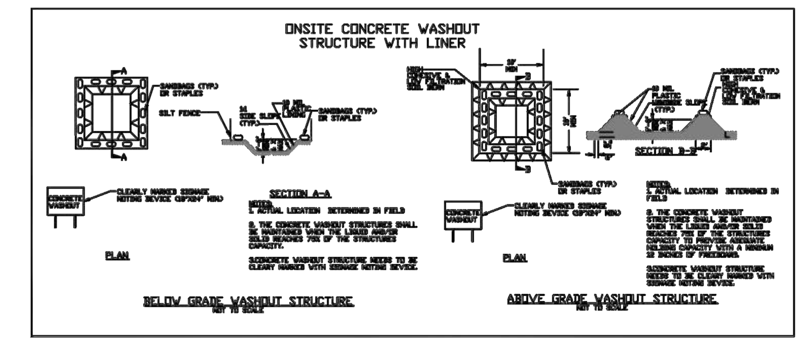
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035027 WILLIAM Z. SHIPMAN 5/01/2020

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