

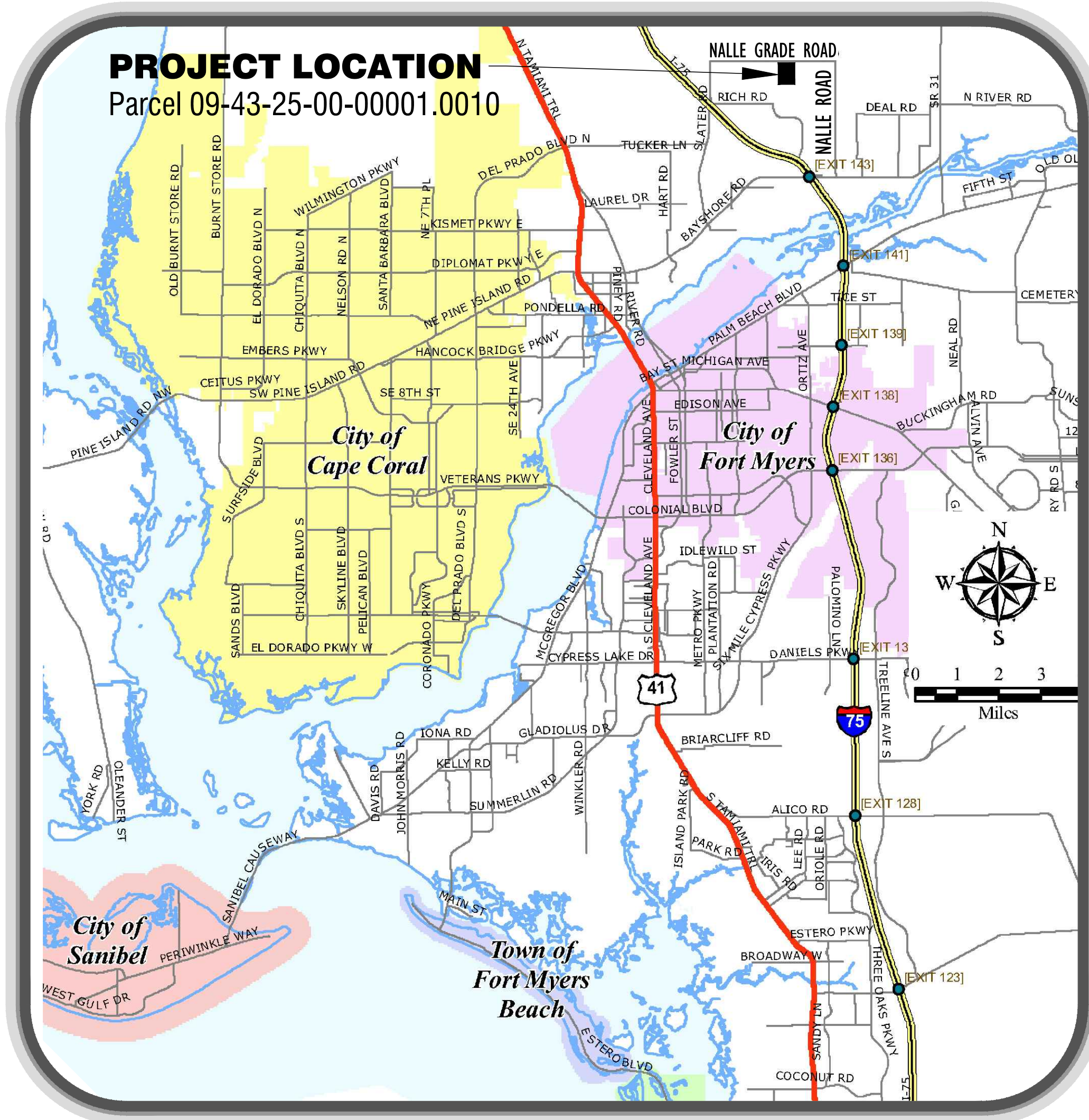
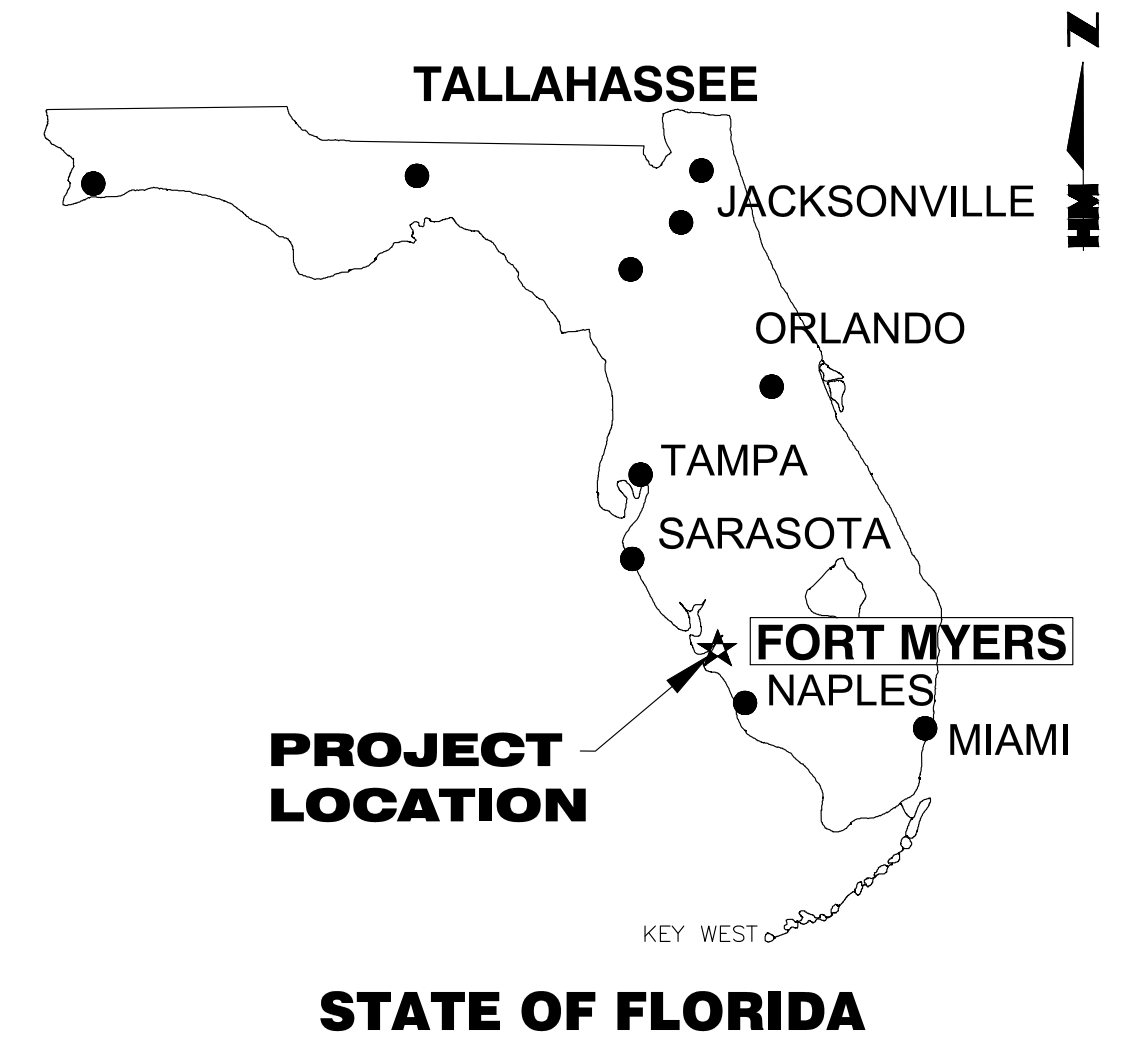
LEE COUNTY BOARD OF COUNTY COMMISSIONERS

DIVISION OF NATURAL RESOURCES

CN-130299

PLANS OF PROPOSED NALLE GRADE PARK HYDROLOGIC RESTORATION

DATE: June, 2016



LOCATION MAP
SECTION 9, TOWNSHIP 43 SOUTH, RANGE 25 EAST
STRAP#: 09-43-25-00-00001.0010

UTILITY CONTACT INFORMATION:

CENTERY LINK: (239) 263-6276
COMCAST TV: (239) 432-1805
TECO PEOPLES GAS: (239) 690-5513
LCEC: (239) 995-2121
LEE COUNTY UTILITIES: (239) 338-3555

GENERAL STATEMENT:

General Statement: Included herewith are site development plans to improve an existing Lee County owned 76.76 acre property located along the south side of Nalle Grade Road as a combination public community park and storm water quality treatment system serving the Bayshore Creek Watershed. The improved water quality treatment will directly benefit the downstream receiving waters of the Caloosahatchee River by the removal of nutrients such as Nitrogen and Phosphorus within the untreated storm runoff from upstream basins of the Bayshore Creek watershed.

The project includes the following general improvements:

- 4.09 acre Dry Retention area impoundment;
- Hydrologic restoration of an existing wetland;
- Ancillary improvements to the park area including two (2) open water (lake) areas and a filter strip bordering Nalle Grade Road.

The existing archery club lease area utilizing the southern third of the parcel will remain "as-is" with exception of minor drainage improvements.

The improvements will be constructed in one phase. A future park parking lot has been planned and shown, but is not included as part of this contract.

INDEX OF SHEETS:

SHEET No.	DESCRIPTION:
13046-01	COVER SHEET
13046-02	AERIAL EXHIBIT - SOILS/FLUCCS DATA
13046-03	GENERAL NOTES
13046-04	BOUNDARY & TOPOGRAPHIC SURVEY
13046-05	SITE PLAN
13046-06	GRADING AND DRAINAGE PLAN - NE
13046-07	GRADING AND DRAINAGE PLAN - NW
13046-08	GRADING AND DRAINAGE PLAN - SE
13046-09	GRADING AND DRAINAGE PLAN - SW
13046-10	TYPICAL SECTIONS
13046-10A	PUMP STATION - HYDRAULIC DIAGRAM AND NOTES
13046-10B	PUMP STATION DETAILS
13046-11	DRAINAGE DETAILS - DS #1, CONTROL STRUCTURE
13046-12	DRAINAGE DETAILS - DS #2, CONTROL STRUCTURE
13046-13	DRAINAGE DETAILS - DS #5, DS #1 & 2 FRONT VIEW
13046-14	DRAINAGE DETAILS - DS #4 (TYPICAL DETAILS)
13046-15	DRAINAGE DETAILS - DS #3 OUTLET STRUCTURE
13046-15A	PAVING AND SITE DETAILS
13046-16	FDOT STANDARD DETAILS
13046-17	FENCING DETAILS
13046-18	EROSION AND SEDIMENT CONTROL PLAN
13046-19	EROSION AND SEDIMENT CONTROL DETAILS
13046-20	
EcoPlanz, Inc.	PLANTING PLANS
13046-21.1	3.44 ACRES OPEN BODY OF WATER
13046-21.2	CREATED FRESHWATER MARSH / VEGETATED STRIP FILTER MARSH
13046-21.3	2.59 OPEN WATER FEATURE
13046-21.4	WETLAND RESTORATION - SUPPLEMENTAL PLANTING ZONES PLAN
RKS Engineers, Inc.	ELECTRICAL PLANS
13046-E-1	DRAWINGS INDEX AND GENERAL NOTES
13046-E-2	ELECTRICAL SITE PLAN
13046-E-3	PUMP CONTROL PANEL
13046-E-4	PUMP CONTROL PANEL AND ELEVATION
13046-E-5	LIT CONTROL PANEL AND ELEVATION
13046-ED-1	ELECTRICAL DETAILS AND RISED DIAGRAM
13046-ED-2	ELECTRICAL DETAILS AND RISED DIAGRAM

PREPARED BY:

ELECTRICAL PLANS DESIGNED BY:
 12651 McGregor Blvd.
Suite 4-402
Fort Myers, FL 33919
TEL: 1.239.481.6775

H.M. HOLE MONTES
 ENGINEERS • PLANNERS • SURVEYORS

6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No. 1772

PLANTING PLANS DESIGNED BY:
 EcoPlanz Inc. 2069 First Street
Suite 303
Fort Myers, FL 33901
TEL: 1.239.672.4373

BOARD OF COUNTY COMMISSIONERS

JOHN E MANNING	DISTRICT 1
CECIL L PENDERGRASS	DISTRICT 2
LARRY KIKER	DISTRICT 3
BRIAN HAMMAN	DISTRICT 4
FRANK MANN	DISTRICT 5

COUNTY MANAGER

ROGER DESJARLAIS

ASSISTANT COUNTY MANAGER

DAVE HARNER

DIVISION OF NATURAL RESOURCES

ROLAND OTTOLINI, P.E.

This is to certify that these plans and the associated construction project are in substantial compliance with the Lee County Land Development Code with the exception of the following deviations which have been approved by the Assistant County Manager.

Deviations:
None requested

Richard E. Brylanski, FL # 42339 Date:

Development Order Approved:
Lee County Administration

Assistant County Manager Date
Douglas L. Meurer, P.E.

THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. "ALWAYS CALL 811 BEFORE YOU DIG" WWW.SUNSHINE811.COM

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

NUMBER	REVISIONS	DATE	DRAWING NO.	PROJECT NO.
1	LDO REVIEW REVISIONS	11/28/2018	13046.CVR	
2	GENERAL REVISION: P.S.; OUTLET STR.; ELECTRICAL PLAN	02/06/2018		2013046
3	REVISION PER SPWMD REVIEW	06/01/2017		
4	REVISION PER LEE COUNTY REVIEW	02/03/2017		
5	REVISION PER SPWMD REVIEW	08/12/2016		

GENERAL NOTES:

1. THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION UNLESS IT IS SIGNED AND SEALED BY THE ENGINEER OF RECORD.
2. ALL ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM 1988.
3. FOR EXISTING BENCH MARK INFORMATION SEE THE PROJECT BOUNDARY SURVEY AND THE SITE PLAN SHEET. CONVERSION OF ELEVATIONS TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) IS ADDITION OF 1.175 TO THE NAVD 88 VALUES.
4. BENCH MARKS SHALL BE ESTABLISHED BY CONTRACTOR DURING CONSTRUCTION WITHIN 100' OF EACH STRUCTURE OR GROUP OF STRUCTURES BY A STATE OF FLORIDA LICENSED PROFESSIONAL SURVEYOR & MAPPER.
5. ALL PROPERTY LINE MARKERS (IRON PINS, CONCRETE MONUMENTS, ETC.) DESTROYED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO RESET PROPERTY MARKERS. THE CONTRACTOR SHALL VERIFY AND RECORD THE EXISTENCE OR LACK OF EXISTENCE OF ALL PROPERTY MONUMENTS ADJACENT TO THE PROJECT PRIOR TO CONSTRUCTION.
6. RIGHT-OF-WAY AND PROPOSED EASEMENT LINES SHOWN ARE APPROXIMATE. ACTUAL PROPOSED EASEMENTS SHALL BE STAKED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION. STAKEOUT SHALL BE BASED UPON SKETCHES AND LEGAL DESCRIPTIONS.
7. THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A FLORIDA LICENSED LAND SURVEYOR TO ESTABLISH THE RIGHT-OF-WAY AND PROPOSED EASEMENTS. IN NO CASE SHALL THE CONTRACTOR CONSTRUCT IMPROVEMENTS OR PERFORM DEMOLITION ACTIVITIES OUTSIDE THE EXISTING RIGHT-OF-WAY OR PROPOSED EASEMENTS WITHOUT THE PRIOR APPROVAL FROM THE PROPER AUTHORITIES. ANY SUCH WORK PERFORMED OUTSIDE THE RIGHT-OF-WAY OR APPROVED PROPOSED EASEMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. THIS PROJECT PRESENTS NO ADVERSE IMPACTS ON LOCAL SURFACE OR GROUNDWATERS.
9. SURFACES MUST VARY EVENLY AND SMOOTHLY BETWEEN GRADES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. A 2-1/2" ALLOWANCE (OVER EXCAVATION) MUST BE PROVIDED FOR ALL SODDED AREAS FROM THAT SHOWN AS A FINISHED GRADE TO THE "TOP OF SOD".
10. IF A REQUIRED DIMENSION IS NOT SHOWN OR A DISCREPANCY IS FOUND ON THE PLANS, THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER PRIOR TO COMMENCING TO THAT PART OF THE AFFECTED CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PROJECT ENGINEER IF THERE IS ANY PROBLEM WITH THE LAYOUT OF DESIGN, SOIL CONDITIONS, PLANT AVAILABILITY, OR OTHER CONDITIONS WHICH AFFECT THE QUALITY OF THE JOB.
11. VEGETATION NOTE: IN ACCORDANCE WITH THE PROVISIONS OF THE LEE COUNTY ALL EXOTIC VEGETATION WILL BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INITIAL REMOVAL AND MAINTENANCE THEREOF THROUGH OUT THE PROJECT. THE CONTRACTOR SHALL TAKE EXTREME CARE TO AVOID ANY DISTURBANCE TO SFWMD AND ACOE JURISDICTIONAL LANDS DURING THEIR CUSTODY AND CONTROL OF THE SITE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE RESTORATION AND MITIGATION OF ANY UNAUTHORIZED JURISDICTIONAL IMPACTS RESULTING DIRECTLY OR INDIRECTLY FROM THEIR WORK PRODUCT AND ACTIVITY.
12. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) UNLESS OTHERWISE SPECIFIED. ALL DETAILS PER FOOT ROAD AND TRAFFIC DESIGNS (LATEST EDITION) UNLESS OTHERWISE SPECIFIED.
13. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR EACH INLET OR OTHER STRUCTURE AND DEVICE AS APPROPRIATE FOR REVIEW AND APPROVAL BY THE PROJECT ENGINEER PRIOR TO FABRICATION.
14. CONTRACTOR SHALL MAINTAIN A CURRENT AND UPDATED SET OF AS-BUILT DRAWINGS AT ALL TIMES AND PROVIDE ONE (1) COPY TO THE PROJECT ENGINEER UPON COMPLETION OF CONSTRUCTION.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THEIR PRESERVATION UNTIL THE PROJECT IS COMPLETE AND ACCEPTED.
16. LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE BASED ON AVAILABLE INFORMATION SUPPLIED BY LOCAL UTILITY DEPARTMENTS AND COMPANIES. EXTREME CAUTION IS TO BE USED WHEN EXCAVATING, AS THE NUMBER AND LOCATION OF EXISTING UTILITIES HAVE NOT BEEN VERIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE AND VERIFY ANY AND ALL EXISTING UTILITIES SHOWN AND NOT SHOWN. CONTACT SUNSHINE STATE ONE CALL (800/432-4770) 72 HOURS PRIOR TO EXCAVATION FOR FIELD LOCATION. ALL COORDINATION AND REQUIRED UTILITY COMPANY TEMPORARY PROTECTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
17. DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT SHOWN, AND PROPERTY DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED AT THE CONTRACTOR'S EXPENSE.
18. UTILITIES TO BE RELOCATED AND/OR PROPOSED UTILITY SERVICES BY OTHERS SHALL BE RESPONSIBILITY AND BE COORDINATED BY THE CONTRACTOR.
19. ANY DAMAGE TO EXISTING DRAINAGE PIPES AND STRUCTURES SHALL BE REPLACED WITH NEW MATERIAL AT THE CONTRACTOR'S EXPENSE.
20. THE CONTRACTOR SHALL COMPLY WITH F.D.O.T. STANDARD INDEX 600 AND WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR MAINTENANCE OF TRAFFIC (MOT) AND MOT PLANS.
21. ALL DAMAGED AREAS TO BE RESTORED TO PREVIOUS CONDITION OR BETTER. MAILBOXES, SIGNS, AND THE LIKE TO BE REMOVED AND REPLACED UNDAMAGED. ALL DISTURBED AREAS TO BE SODDED. PROVIDE SOLID SOD ALONG NEW SLOPES AND IN SWALES TO PREVENT EROSION AND A MINIMUM OF 24 INCHES WIDE AROUND NEW DRAINAGE STRUCTURES.
22. CONTRACTOR MUST COMPLY WITH THE FLORIDA TRENCH SAFETY ACT OF 1990.
23. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM ACCESS ROADS AND DRAINAGE SWALES AT COMPLETION OF WORK EACH DAY.
24. ALL EXCESS CONSTRUCTION MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE LOCAL AND FEDERAL CODES AND REGULATIONS IN A LEGAL MANNER.
25. PRIOR TO SODDING THE ENGINEER SHALL BE CONTACTED TO VERIFY SWALE INVERTS FOR PROPER DRAINAGE. THE ENGINEER RESERVES THE RIGHT TO ESTABLISH SWALE GRADES FOR RESTORATION ACTIVITIES TO ENSURE PROPER OFF-SITE TO ONSITE DRAINAGE FOLLOWING RESTORATION.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE GRADING IN AREAS NOT PROVIDED WITH ELEVATION CONTROL TO PREVENT STANDING WATER AND TRIPPING HAZARDS.
27. THE CONTRACTOR SHALL ABIDE BY ALL RULES AND CONDITIONS OF EXISTING SFWMD AND LEE COUNTY PERMITS.
28. ALL DISTURBED SLOPES SHALL BE SODDED WITHIN 48 HOURS OF COMPLETION OF FINAL GRADING.
29. ALL EROSION CONTROL DEVICES (I.E. TURBIDITY CURTAINS AND SILT FENCES) SHALL BE IN PLACE PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES.
30. THE CONTRACTOR SHALL PREPARE AND SUBMIT THE EPA NPDES PERMIT AS SPECIFIED IN THE SPECIFICATIONS.
31. THE CONTRACTOR SHALL CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH ALL APPLICABLE PERMITS, LAWS AND REGULATIONS. CLEANING SHALL BE EXECUTED DAILY TO KEEP THE WORK, SITE AND ADJACENT PROPERTIES FREE FROM ACCUMULATIONS OF WASTE MATERIALS, WATER, ERODED MATERIAL, RUBBISH AND WIND BLOWN DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS.
32. THE CONTRACTOR SHALL PROVIDE SUITABLE ON-SITE CONTAINERS FOR THE DAILY COLLECTION OF ALL WASTE MATERIALS, DEBRIS AND RUBBISH. THE CONTAINERS SHALL BE PERIODICALLY EMPTIED AND WASTE MATERIALS DISPOSED OF AT A PROPERLY LICENSED AND PERMITTED DISPOSAL AREA AWAY FROM THE SITE.
33. PRIOR TO FINAL COMPLETION, THE CONTRACTOR SHALL CONDUCT AN INSPECTION OF SIGHT-EXPOSED INTERIOR AND EXTERIOR SURFACES AND ALL WORK AREAS TO VERIFY THAT THE ENTIRE WORK AND THE ENTIRE CONSTRUCTION AREA OF THE WORK ARE CLEAN.
34. ALL WORK SHALL BE COMPLETED IN A PROFESSIONAL MANNER WITH THE SITE BEING LEFT CLEAN BY CONTRACTOR AND OTHER RELATED CONTRACTORS.
35. THE CONTRACTOR SHALL PROVIDE PROTECTION OF EXISTING TREES TO BE PRESERVED ON OR OFF SITE WITHIN AREAS AFFECTED BY CONSTRUCTION.
36. ANY WELLS DISCOVERED DURING EXCAVATION, EARTHMOVING OR CONSTRUCTION MUST BE REPORTED TO ENGINEER WITHIN 24 HOURS OF DISCOVERY.
37. ANY WELLS DISCOVERED ON SITE THAT WILL HAVE NO USE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN AN APPROVED MANNER.
38. IF EVIDENCE OF THE EXISTENCE OF HISTORIC RESOURCES IS DISCOVERED OR OBSERVED AT DEVELOPMENT SITES OR DURING DEVELOPMENT ACTIVITIES AFTER FINAL APPROVAL, ALL WORK SHALL CEASE IN THE AREA OF EFFECT AS DETERMINED BY THE DIRECTOR. THE DEVELOPER, OWNER, CONTRACTOR, OR AGENT THEREOF SHALL NOTIFY THE DEPARTMENT OF HISTORICAL RESOURCES (HISTORY CENTER) WITHIN TWO WORKING DAYS. EXAMPLES OF EVIDENCE OF HISTORIC RESOURCES INCLUDE WHOLE OR FRAGMENTARY STONE TOOLS, SHELL TOOLS, ABORIGINAL OR HISTORIC POTTERY, HISTORIC GLASS, HISTORIC BOTTLES, BONE TOOLS, HISTORIC BUILDING FOUNDATIONS, SHELL MOUNDS, SHELL MIDDENS, OR SAND MOUNDS. THE DIRECTOR SHALL ASSESS THE SIGNIFICANCE OF THE FINDS AND MITIGATE ANY ADVERSE EFFECTS AS SOON AS POSSIBLE, BUT NOT LATER THAN THREE WORKING DAYS OF NOTIFICATION.
39. IF ANY HUMAN SKELETAL REMAINS OR ASSOCIATED BURIAL ARTIFACTS ARE DISCOVERED AT DEVELOPMENT SITES OR DURING DEVELOPMENT SITES OR DURING DEVELOPMENT ACTIVITY, ALL WORK IN THE AREA MUST CEASE, AND THE PERMITTEE MUST IMMEDIATELY NOTIFY THE NEAREST LAW ENFORCEMENT OFFICE AND NOTIFY THE DEPARTMENT OF HISTORICAL RESOURCES WITHIN TWO WORKING DAYS. ACCORDING TO CHAPTER 872, FLORIDA STATUTES, IT IS UNLAWFUL TO DISTURB, VANDALIZE, OR DAMAGE A HUMAN BURIAL.
40. THIS SITE CAN BE UTILIZED SAFELY FOR BUILDING PURPOSES WITHOUT UNDUE DANGER FROM FLOODING OR ADVERSE SOIL CONDITIONS.
41. LENGTH OF STORM DRAIN PIPES ARE APPROXIMATE AND ARE MEASURED FROM CENTER OF STRUCTURE.
42. THE STORM DRAINAGE PIPING SYSTEM SHALL BE SUBJECTED TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCED TO SCHEDULE INSPECTION.
43. THE CONTRACTOR SHALL MAINTAIN THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE INSPECTED BY THE OWNER'S ENGINEER PRIOR TO FINAL ACCEPTANCE.
44. LOCATIONS OF INLETS AND STORM DRAINS MAY BE FIELD ADJUSTED BY ENGINEER TO PRESERVE EXISTING VEGETATION.
45. THE CONTRACTOR IS REQUIRED TO ADJUST ALL VALVE BOXES, MANHOLE RIMS, GRATES, ETC. AS NECESSARY TO MATCH PROPOSED GRADES.
46. CONTRACTOR TO PROVIDE SILT FENCE, STAKED HAY BALES AND OTHER APPROPRIATE MEASURES TO AFFECT THE FILTRATION OF SURFACE WATER FLOWS AND TO PROVIDE EROSION PROTECTION DURING CONSTRUCTION ACTIVITIES. PROTECTION IS TO BE MAINTAINED DURING THE CONSTRUCTION PERIOD UNTIL DISTURBED SOILS HAVE BEEN STABILIZED WITH GRASS OR SUITABLE EROSION PROTECTION TREATMENT.
47. EXISTING OFF-SITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
48. CONTRACTOR SHALL RETAIN, ON THE WORK SITE, COPIES OF ANY PERMITS NECESSARY FOR CONSTRUCTION.
49. CONTRACTOR SHALL PROMPTLY REPORT ALL FIELD CHANGES TO THE ENGINEER.
50. CONTRACTOR SHALL CLEAR ALL EXCAVATION AND FILL AREAS; ACTUAL LIMITS OF CLEARING SHALL BE DETERMINED IN THE FIELD BY OWNER OR ENGINEER.
51. CONTRACTOR SHALL REMOVE ALL MUCK AND OTHER UNSUITABLE MATERIAL FROM FILL AREAS PRIOR TO PLACEMENT OF FILL. ALL MUCK AND OTHER UNSUITABLE MATERIAL EXCAVATED FROM FILTER MARSHES OR REMOVED FROM FILL AREAS SHALL BE STOCKPILED AT THE PROPOSED PROJECT AS DETERMINED BY THE OWNER.
52. CONTRACTOR SHALL USE DESIGNATED CONSTRUCTION ENTRANCE FOR EMPLOYEES AND DELIVERY OF MATERIALS.
53. DURING CONSTRUCTION, GRATE INLET AND JUNCTION BOX OPENINGS SHALL BE COVERED WITH FILTER FABRIC (MIRAFI 140N OR APPROVED EQUAL) TO PREVENT DEBRIS AND FILL FROM DEPOSITING INTO THE INLET.
54. THE CONTRACTOR SHALL ACCURATELY PLOT THE LOCATIONS AND DEPTHS OF ALL IMPROVEMENTS INSTALLED ON A FINAL SET OF RECORD DRAWINGS.
55. CONTRACTOR IS REQUIRED TO OBTAIN FROM THE ENGINEER AND OWNER WRITTEN APPROVAL FOR ANY DEVIATIONS FROM THE PLANS AND/OR SPECIFICATIONS.
56. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY REQUIRED TREE REMOVAL PERMITS IF NECESSARY.
57. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NOI (NOTICE OF INTENT) FROM DEP PRIOR TO CONSTRUCTION.
58. EXCAVATION AND FILL ARE CONTRACTORS RESPONSIBILITY. THE OWNER IS NOT RESPONSIBLE FOR QUALITY OF MATERIAL ON SITE. GEOTECHNICAL BORING REPORT WILL PROVIDE ONLY A QUALITATIVE UNDERSTANDING OF ON SITE MATERIAL AT SELECTED LOCATIONS.
59. IT HAS BEEN THE EXPERIENCE OF THE COUNTY, WITH PROJECTS CONSTRUCTED WITHIN THIS GENERAL GEOGRAPHIC AREA, THAT ALTHOUGH PRELIMINARY BORINGS DID NOT INDICATE A CONSTANT PRESENCE OF ROCK, ROCK WAS ENCOUNTERED WHILE PERFORMING UNDERGROUND INSTALLATIONS. THEREFORE, THE CONTRACTOR SHOULD CONSIDER THE INCREASED COST OF ALL UNDERGROUND WORK ACTIVITIES WHILE PREPARING HIS BID. ALL COST OF ROCK EXCAVATION SHALL BE INCLUDED IN THE APPROPRIATE ITEMS OF WORK CONTAINED WITHIN THE CONTRACT. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE ALLOWED FOR ADDITIONAL WORK DIRECTLY ASSOCIATED WITH THE SPUDDING, EXCAVATION, CRUSHING, DISPOSAL, REPLACEMENT OF DISPLACED VOLUME OF EXTRACTED ROCK WITH FILL MATERIAL OR SPECIAL HANDLING OF ROCK.

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△		
△		
△		
△	REVISION PER LEE COUNTY REVIEW	02/03/2017
NUMBER	REVISIONS	DATE

NALLE GRADE STORMWATER PARK
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
VERTICAL SCALE	HORIZONTAL SCALE

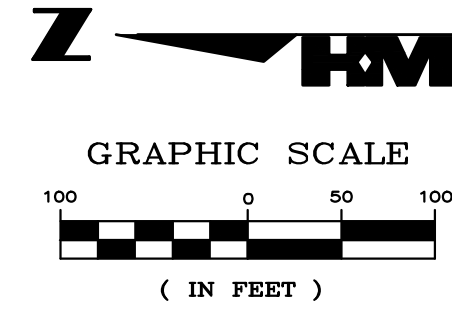
HM
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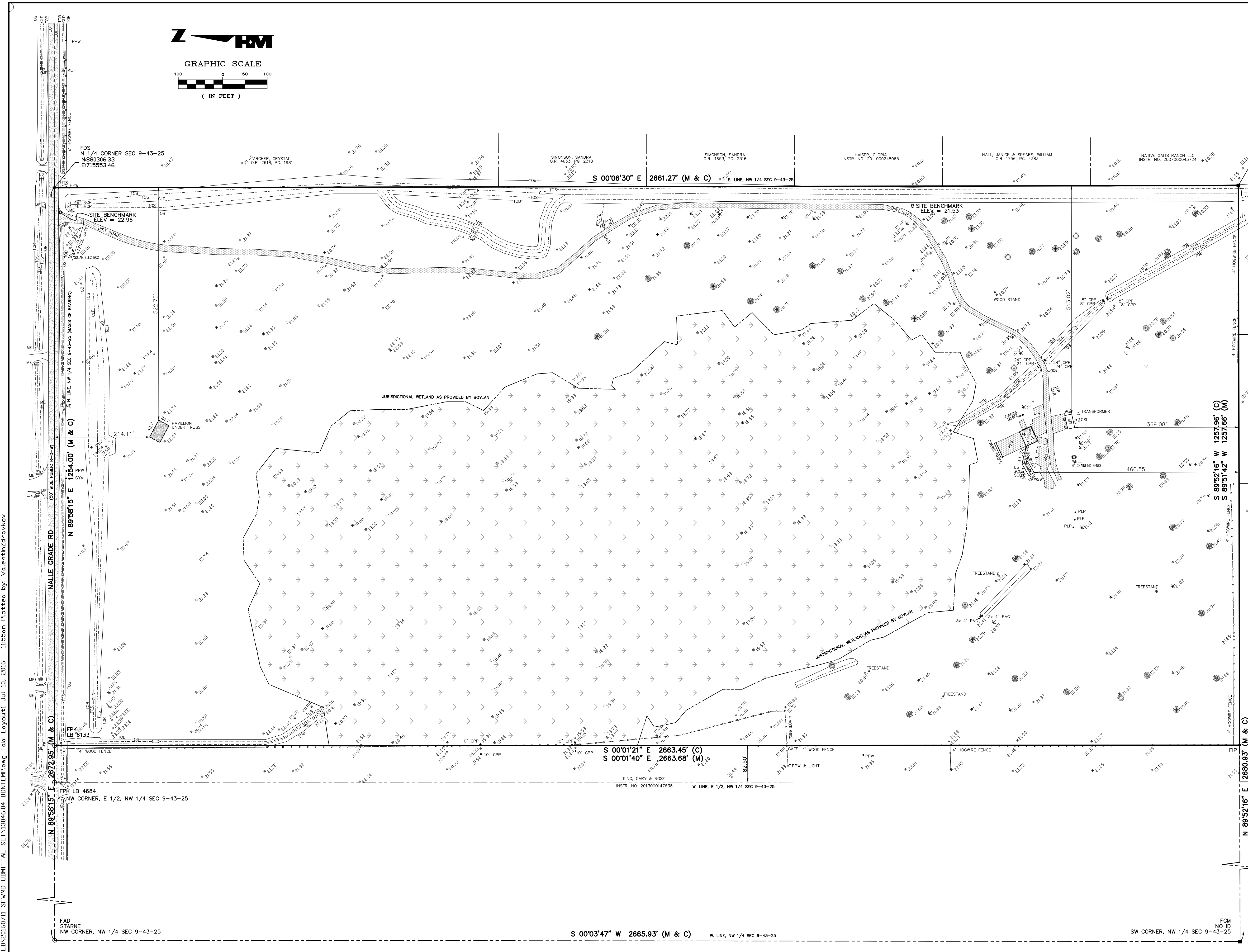
GENERAL NOTES

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW:	
CAD FILE NAME:	DRAWING NO.:
13046.GN	
PROJECT NO.:	SHEET NO.:
2013046	3

December 07, 2018



- LEGEND**
- (C) CALCULATED
 - CLD CENTERLINE OF DITCH
 - CPP CORRUGATE PLASTIC PIPE
 - CSL CONCRETE SLAB
 - CSW CONCRETE SIDEWALK
 - EOP EDGE OF PAVEMENT
 - ES ELECTRIC SERVICE
 - FAD FOUND ALUMINUM DISC
 - FCM FOUND CONCRETE MONUMENT
 - FDS FOUND SPIKE
 - FIP FOUND IRON PIPE
 - FP FLAG POLE
 - FPK FOUND PK NAIL AND DISC
 - GVA GUY WIRE ASSEMBLY
 - (M) MEASURED
 - ME MITERED END
 - PAV UT PAVILION UNDER TRUSS
 - PLP PLASTIC LIGHT POLE
 - PPW WOODEN POWER POLE
 - RCP REINFORCED CONCRETE PIPE
 - SCO SEWER CLEAN OUT
 - TOB TOP OF BANK
 - TOS TOE OF SLOPE
 - UTS UNITED TELEPHONE SERVICE
 - WSW WOOD SIDEWALK
 - AT ARCHERY TARGET
 - AS ARCHERY SHOOTING POINT



FCM NO ID SE CORNER, NW 1/4 SEC 9-43-25
N8775.45.06
E715558.49

S 89°52'16" (C) W 1257.96'
S 89°51'42" W 1257.66' (M)

PROPERTY DESCRIPTION:
THE EAST ONE-HALF (E 1/2) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 9, IN TOWNSHIP 43 SOUTH, RANGE 25 EAST, EXCEPTING THE WEST 82 1/2 FEET THEREOF.

NOTES:
THIS PROPERTY IS SUBJECT TO EASEMENTS, RESERVATIONS OR RESTRICTIONS OF RECORD.
PROPERTY AREA: 76.764 ACRES, MORE OR LESS.
BEARINGS SHOWN HEREON REFER TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 43 SOUTH, RANGE 25 SOUTH, LEE COUNTY FLORIDA AS BEING N.89°58'15"E.
ABSTRACT OF TITLE HAS NOT BEEN REVIEWED BY SURVEYOR.
STATE PLANE COORDINATES SHOWN HEREON REFER TO FLORIDA STATE PLANE WEST ZONE N.A.D. 83, 1999 ADJUSTMENT.
JURISDICTIONAL WETLAND LINE LOCATION PROVIDED BY BOYLAN ENVIRONMENTAL CONSULTANTS, INC.
ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
SITE BENCHMARKS:
BM 1022-69-04, SET MAG NAIL AND DISC, LB 1772, AT ENTRANCE DRIVE TO PARK. ELEVATION = 22.96.
BM 1022-69-03, SET IRON ROD WITH CAP, LB 1772, AT SOUTHERN BEND IN DIRT ROAD, EAST SIDE OF PROPERTY, ELEVATION = 21.53.
THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
CERTIFIED TO: LEE COUNTY, FLORIDA
I HEREBY CERTIFY THAT THIS SKETCH OF THE HEREON DESCRIBED PROPERTY WAS SURVEYED UNDER MY DIRECTION ON 1/14/2014. I FURTHER CERTIFY THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA PURSUANT TO CHAPTER 5J-17.050-.052, F.A.C.
HOLE MONTES, INC.
CERTIFICATE OF AUTHORIZATION NUMBER LB 1772

NOTES:
THIS PROPERTY IS SUBJECT TO EASEMENTS, RESERVATIONS OR RESTRICTIONS OF RECORD.
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PROPERTY AREA: 76.764 ACRES, MORE OR LESS.
BEARINGS SHOWN HEREON REFER TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 43 SOUTH, RANGE 25 SOUTH, LEE COUNTY FLORIDA AS BEING N.89°58'15"E.
ABSTRACT OF TITLE HAS NOT BEEN REVIEWED BY SURVEYOR.
STATE PLANE COORDINATES SHOWN HEREON REFER TO FLORIDA STATE PLANE WEST ZONE N.A.D. 83, 1999 ADJUSTMENT.
JURISDICTIONAL WETLAND LINE LOCATION PROVIDED BY BOYLAN ENVIRONMENTAL CONSULTANTS, INC.
ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
SITE BENCHMARKS:
BM 1022-69-04, SET MAG NAIL AND DISC, LB 1772, AT ENTRANCE DRIVE TO PARK. ELEVATION = 22.96.
BM 1022-69-03, SET IRON ROD WITH CAP, LB 1772, AT SOUTHERN BEND IN DIRT ROAD, EAST SIDE OF PROPERTY, ELEVATION = 21.53.
THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
CERTIFIED TO: LEE COUNTY, FLORIDA
I HEREBY CERTIFY THAT THIS SKETCH OF THE HEREON DESCRIBED PROPERTY WAS SURVEYED UNDER MY DIRECTION ON 1/14/2014. I FURTHER CERTIFY THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA PURSUANT TO CHAPTER 5J-17.050-.052, F.A.C.
HOLE MONTES, INC.
CERTIFICATE OF AUTHORIZATION NUMBER LB 1772

NOTES:
THIS PROPERTY IS SUBJECT TO EASEMENTS, RESERVATIONS OR RESTRICTIONS OF RECORD.
PROPERTY AREA: 76.764 ACRES, MORE OR LESS.
BEARINGS SHOWN HEREON REFER TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 43 SOUTH, RANGE 25 SOUTH, LEE COUNTY FLORIDA AS BEING N.89°58'15"E.
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HOLE MONTES, INC.
CERTIFICATE OF AUTHORIZATION NUMBER LB 1772

BY _____ P.S.M. #5628
THOMAS M. MURPHY STATE OF FLORIDA

FIELD BOOK	1023/23-40
REVISIONS	DATE REV BY

NALLE GRADE PARK

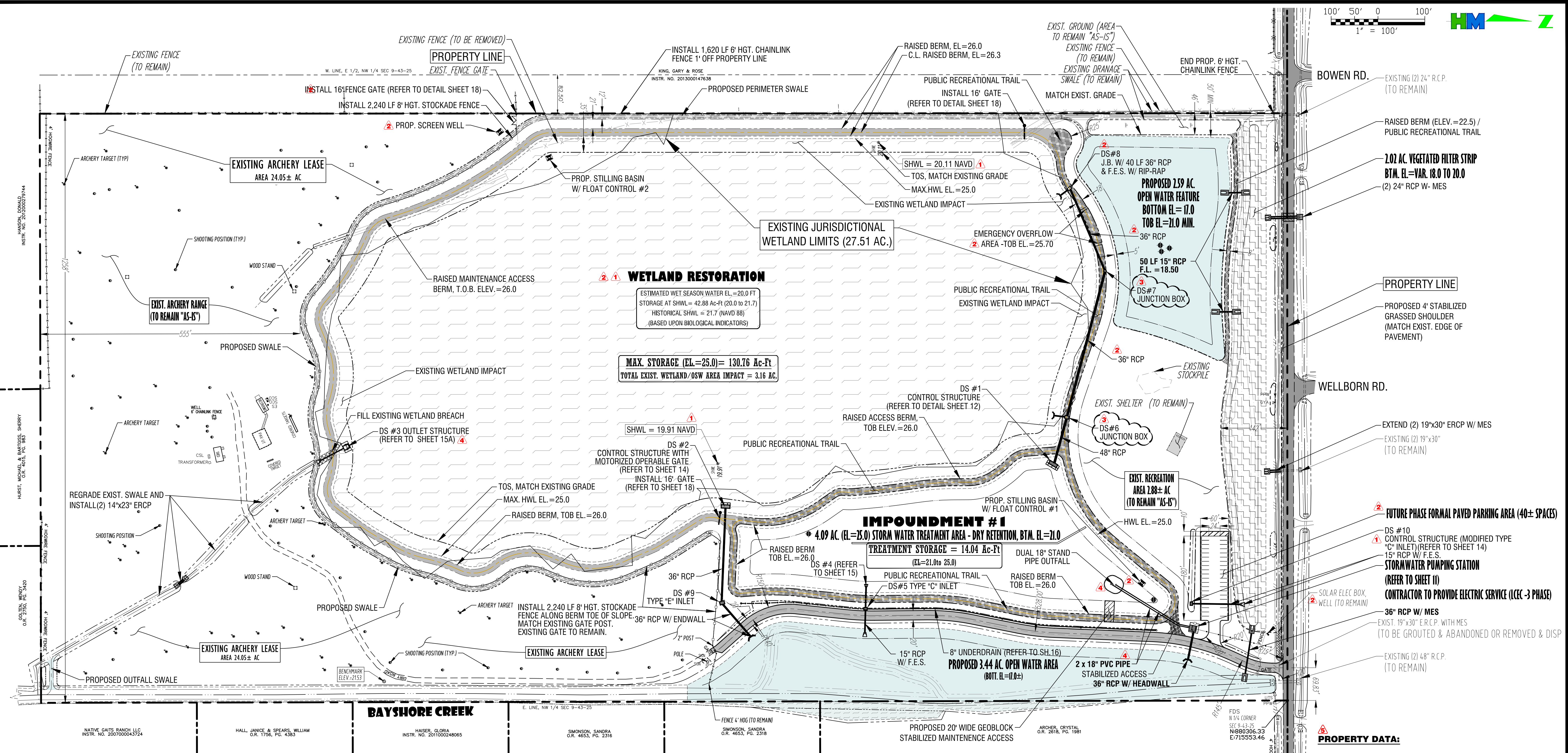
NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.	PARTY CHIEF: BH	DATE: 1/14/2014
	DRAWN BY: BEN	DATE: 1/14
	CHECKED BY: TMM	DATE: 9-43-25
	SEC-TWN-RGE	HORIZONTAL SCALE: 1"=100'
	N/A	

HOLE MONTES
ENGINEERS • PLANNERS • SURVEYORS

6224 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of Authorization No.1772

BOUNDARY SURVEY

DRAWING NO.	A-2529
PROJECT NO.	13046
REFERENCE NO.	13046BDN 4



PROPOSED LAND COVER TABLE (PERMIT AREA 76.76 AC)

	AC.	% TOTAL
EXISTING LANDS TO BE UNDISTURBED	26.83±	34.95%
IMPOUNDMENT #1 AND #2 W/ BERMS (INCLUDES PRESERVED WETLAND)	37.19± (24.72±)	48.45% (32.21%)
PROPOSED OPEN WATER AREAS	6.03±	7.86%
PROPOSED IMPERVIOUS PARKING	0.28±	0.36%
PERVIOUS AREAS TO BE REGRADED	6.43±	8.38%
TOTAL	76.76±	100.00%

LEGEND:

	PROPERTY LINE		WETLAND IMPACT AREA
	TOP OF BANK		OPEN WATER
	TOE OF SLOPE		VEGETATED FILTER STRIP
	STORM DRAIN STRUCTURE / PIPE		BERM - MAINTENANCE ACCESS
	CHAINLINK FENCE		BERM - PUBLIC RECR. TRAIL
	STOCKAGE FENCE W/ GATE		ACCESS ROAD / PUBLIC PARKING
	EXISTING FENCE		EXISTING PAVEMENT
			WETLAND - CWL @ EL=25.0

PROPERTY DATA:
 STRAP#: 09-43-25-00-00001-0010
 AREA: 76.764 ACRES, MORE OR LESS.
 ELEVATIONS: NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
 SITE BENCHMARKS:
 BM 1022-69-04, EL. = 22.96 (SET MAG NAIL&DISC, LB 1772, AT ENTRANCE DRIVE TO PARK)
 BM 1022-69-03, EL. = 21.53 (SET IRON ROD WITH CAP, LB1772, AT SOUTHERN BEND IN DIRT ROAD, EAST SIDE OF PROPERTY)

TOTAL STORM WATER STORAGE VOLUME = 144.80 Ac-Ft

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NUMBER	REVISIONS	DATE
5	LDO REVIEW REVISIONS	11/28/2018
4	GENERAL REVISION	02/06/2018
3	REVISION PER SPFVMD REVIEW	06/01/2017
2	REVISION PER LEE COUNTY REVIEW	02/03/2017
1	REVISION PER SPFVMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
 LEE COUNTY, FLORIDA

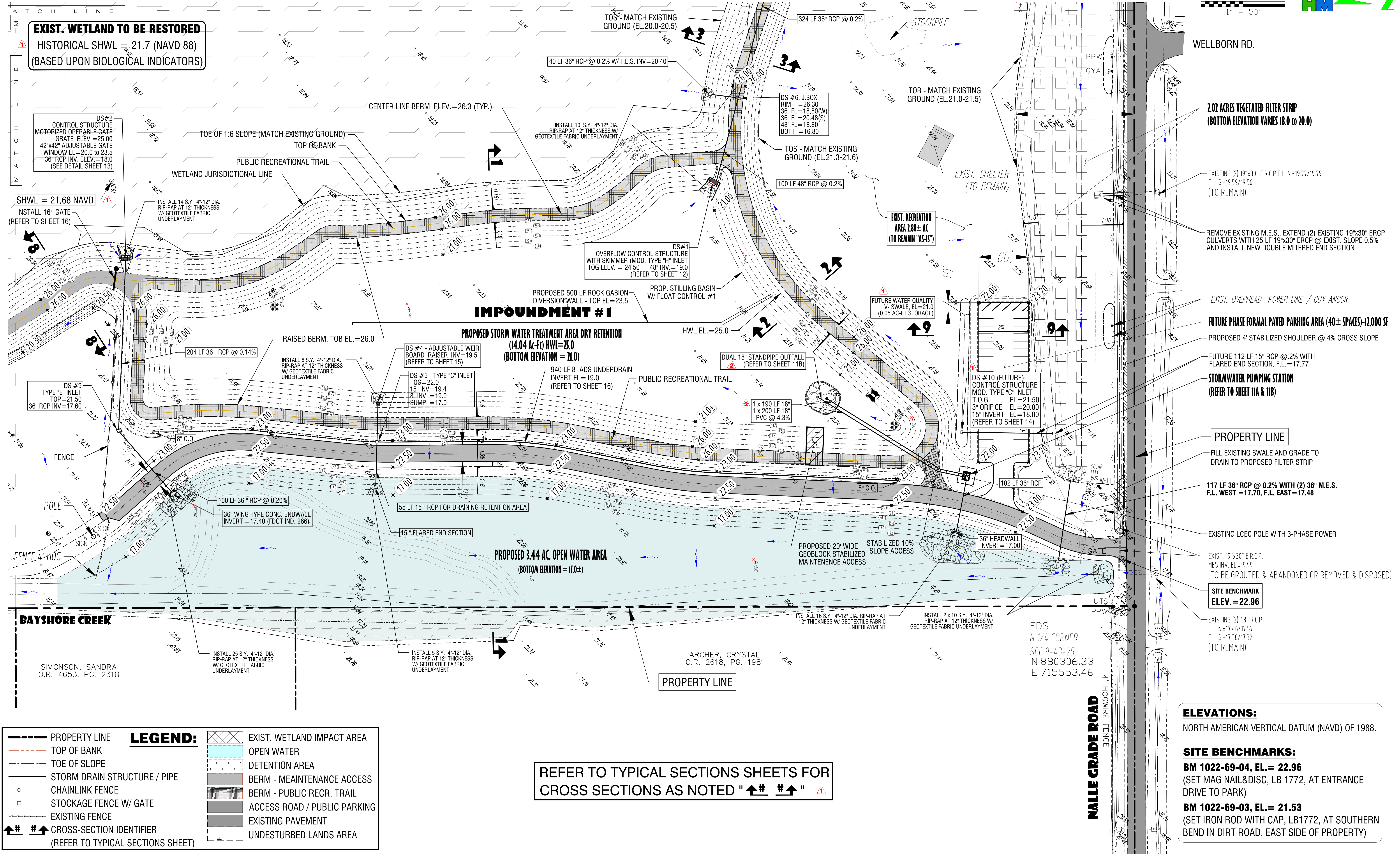
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DRAWN BY	VZ	DATE	02/18/15
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	1"=100'



6200 Whiskey Creek Drive
 Fort Myers, FL. 33919
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 Florida Certificate of
 Authorization No.1772

SITE PLAN

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW.	CAD FILE NAME:	DRAWING NO.:
RICHARD E. BRYLANSKI P.E. FLORIDA PROFESSIONAL ENGINEER REGISTRATION #42339 DATE:	13046.SP	
	PROJECT NO.:	SHEET NO.:
	2013046	5



EXIST. WETLAND TO BE RESTORED
HISTORICAL SHWL = 21.7 (NAVD 88)
(BASED UPON BIOLOGICAL INDICATORS)

DS#2
CONTROL STRUCTURE
MOTORIZED OPERABLE GATE
GRATE ELEV. = 25.00
42"x42" ADJUSTABLE GATE
WINDOW EL. = 20.0 TO 23.5
36" RCP INV. ELEV. = 18.0
(SEE DETAIL SHEET 13)

SHWL = 21.68 NAVD
INSTALL 16" GATE
(REFER TO SHEET 16)

DS #9
TYPE "E" INLET
TOP = 21.50
36" RCP INV. = 17.60

LEGEND:

	PROPERTY LINE		EXIST. WETLAND IMPACT AREA
	TOP OF BANK		OPEN WATER
	TOE OF SLOPE		DETENTION AREA
	STORM DRAIN STRUCTURE / PIPE		BERM - MAINTENANCE ACCESS
	CHAINLINK FENCE		BERM - PUBLIC RECR. TRAIL
	STOCKAGE FENCE W/ GATE		ACCESS ROAD / PUBLIC PARKING
	EXISTING FENCE		EXISTING PAVEMENT
	CROSS-SECTION IDENTIFIER (REFER TO TYPICAL SECTIONS SHEET)		UNDESTRUCTURED LANDS AREA

REFER TO TYPICAL SECTIONS SHEETS FOR
CROSS SECTIONS AS NOTED " #↑ #↑ "

ELEVATIONS:
NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

SITE BENCHMARKS:
BM 1022-69-04, EL. = 22.96
(SET MAG NAIL & DISC, LB 1772, AT ENTRANCE DRIVE TO PARK)
BM 1022-69-03, EL. = 21.53
(SET IRON ROD WITH CAP, LB 1772, AT SOUTHERN BEND IN DIRT ROAD, EAST SIDE OF PROPERTY)

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NUMBER	REVISIONS	DATE
4		
3		
2	GENERAL REVISION	02/06/2018
1	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

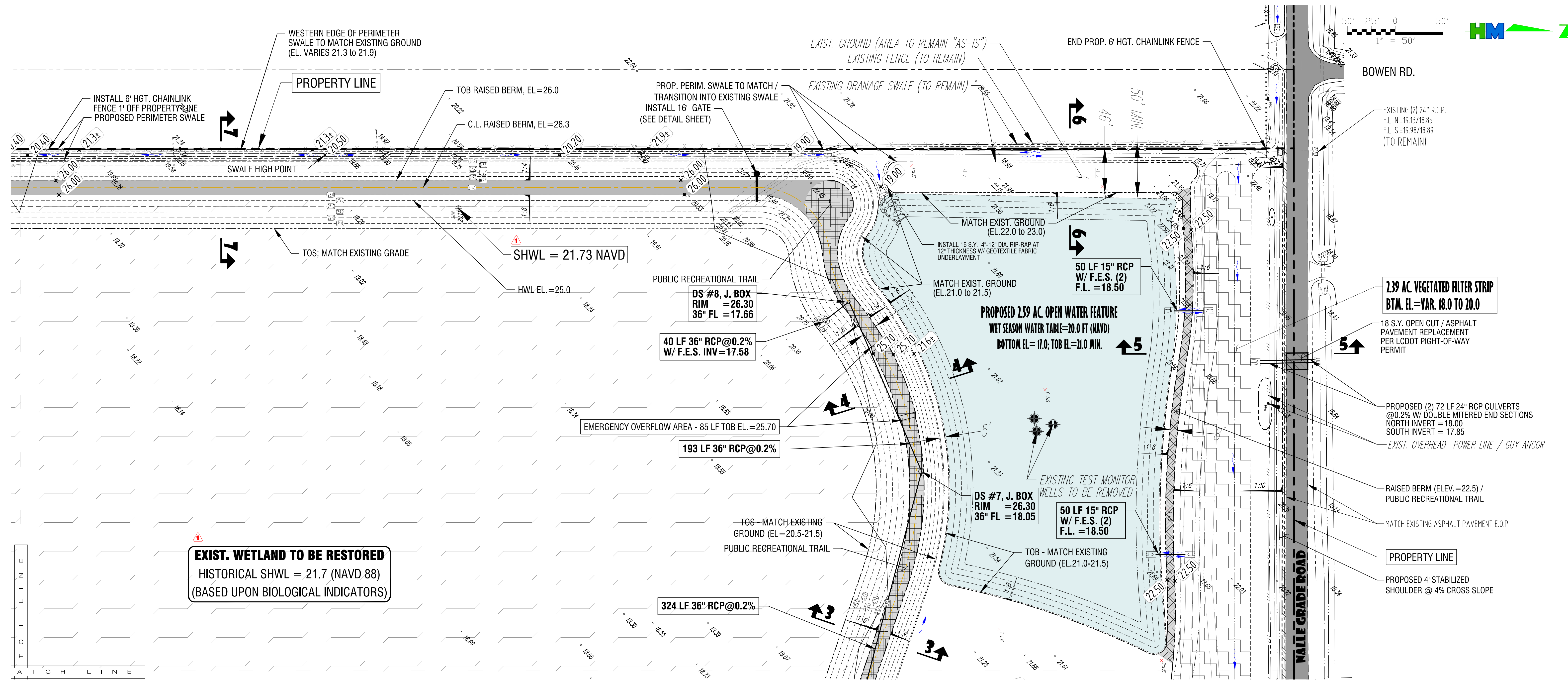
DESIGNED BY	REB	DATE	MAY/16
DRAWN BY	VZ	DATE	02/18/15
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	1"=50'

HM
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Fort Myers, FL. 33919
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GRADING & DRAINAGE PLAN
NORTHEAST QUARTER

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RICHARD E. BRZYLANSKI P.E. FLORIDA PROFESSIONAL ENGINEER REGISTRATION # 42339 DATE:	13046.GDP	
	PROJECT NO.:	SHEET NO.:
	2013046	6



EXIST. WETLAND TO BE RESTORED
 HISTORICAL SHWL = 21.7 (NAVD 88)
 (BASED UPON BIOLOGICAL INDICATORS)

REFER TO TYPICAL SECTIONS SHEETS FOR
 CROSS SECTIONS AS NOTED "▲# ▲#"

LEGEND:	
	PROPERTY LINE
	TOP OF BANK
	TOE OF SLOPE
	STORM DRAIN STRUCTURE / PIPE
	CHAINLINK FENCE
	STOCKAGE FENCE W/ GATE
	EXISTING FENCE
	CROSS-SECTION IDENTIFIER (REFER TO TYPICAL SECTIONS SHEET)
	EXIST. WETLAND IMPACT AREA
	OPEN WATER
	DETENTION AREA
	BERM - MAINTENANCE ACCESS
	BERM - PUBLIC RECR. TRAIL
	ACCESS ROAD / PUBLIC PARKING
	EXISTING PAVEMENT
	UNDESTRUCTED LANDS AREA

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NUMBER	REVISIONS	DATE
4		
3		
2	REVISION PER LEE COUNTY REVIEW	02/03/2017
1	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
 LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY VZ	02/18/15
CHECKED BY REB	DATE DECEMBER/18
VERTICAL SCALE N/A	HORIZONTAL SCALE 1"=50'

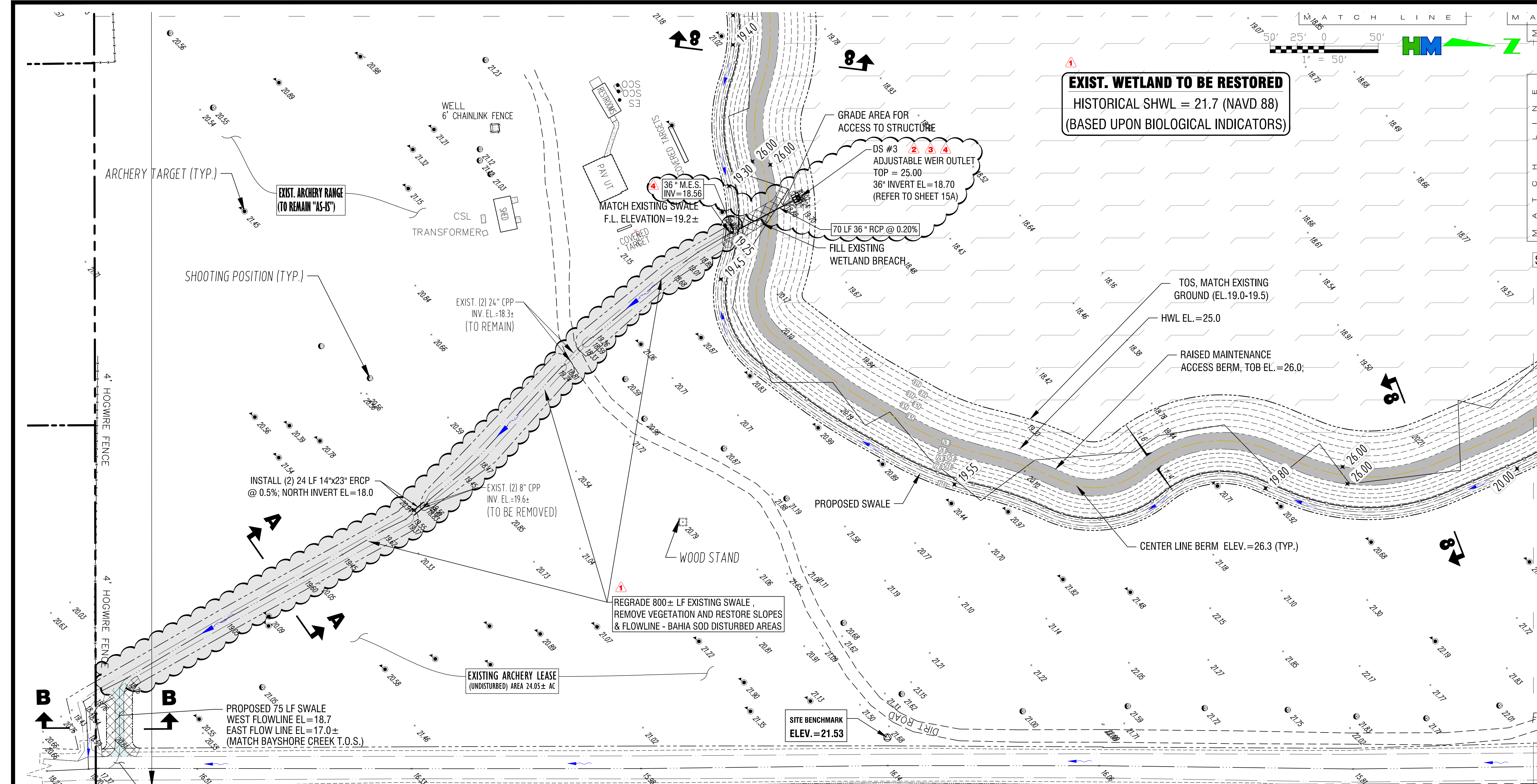


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 Phone: (239) 985-1200
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 Authorization No.1772

GRADING & DRAINAGE PLAN
 NORTHWEST QUARTER

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 UNLESS SIGNED & SEALED BELOW:
 RICHARD E. BRYLANSKI P.E.
 FLORIDA PROFESSIONAL ENGINEER
 REGISTRATION #42339
 DATE

CAD FILE NAME:	DRAWING NO.:
13046.GDP	
PROJECT NO.:	SHEET NO.:
2013046	7



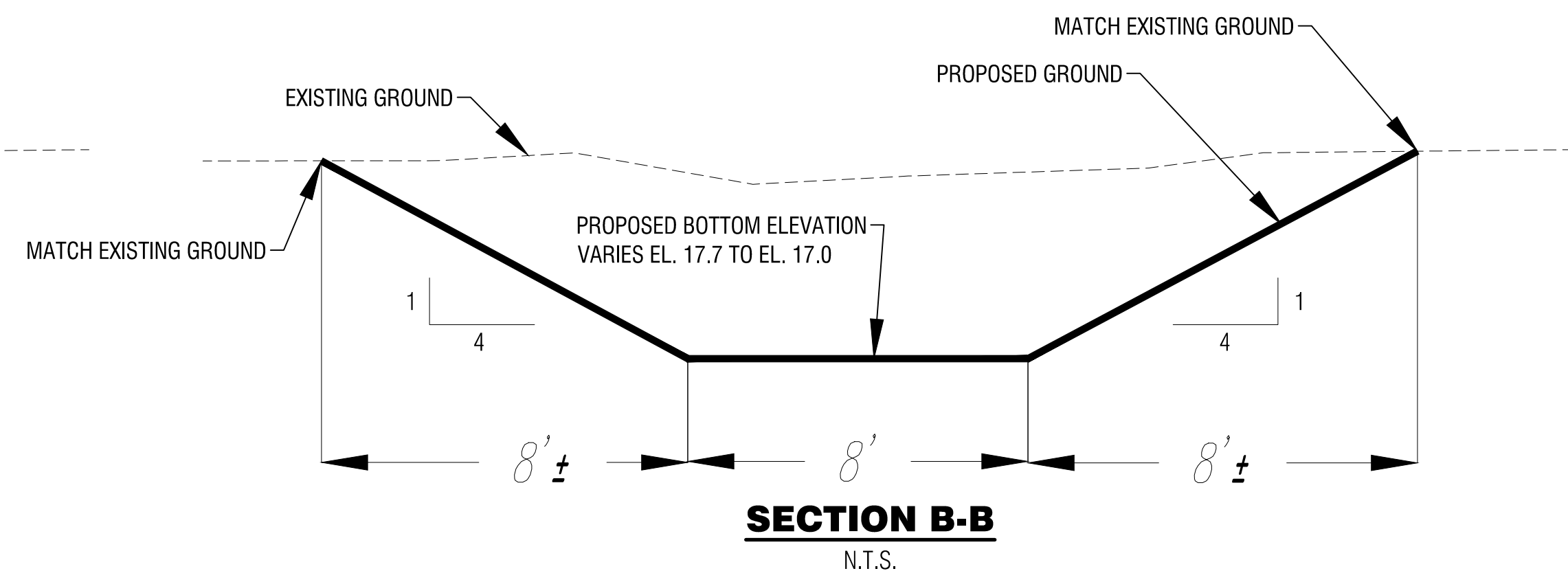
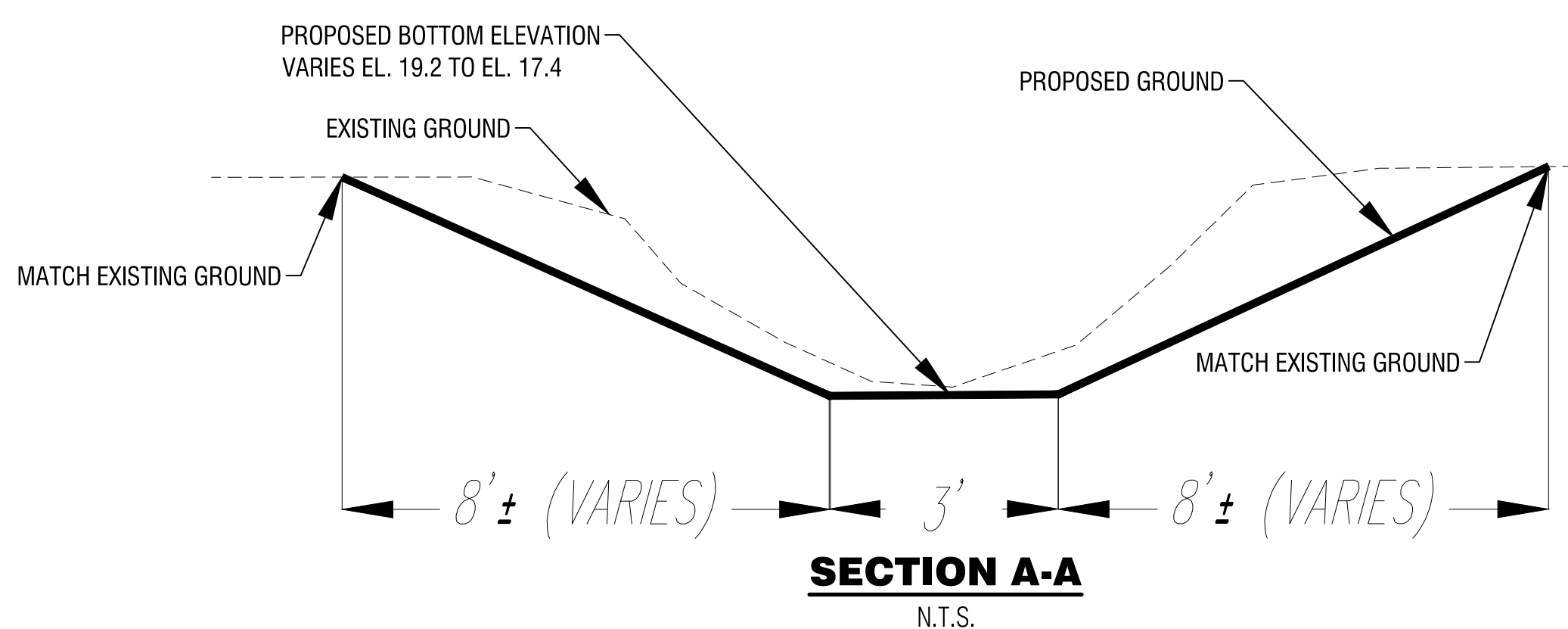
EXIST. WETLAND TO BE RESTORED
 HISTORICAL SHWL = 21.7 (NAVD 88)
 (BASED UPON BIOLOGICAL INDICATORS)

ELEVATIONS:
 NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

SITE BENCHMARKS:
BM 1022-69-04, EL.= 22.96
 (SET MAG NAIL&DISC, LB 1772, AT ENTRANCE DRIVE TO PARK)
BM 1022-69-03, EL.= 21.53
 (SET IRON ROD WITH CAP, LB1772, AT SOUTHERN BEND IN DIRT ROAD, EAST SIDE OF PROPERTY)

REFER TO TYPICAL SECTIONS SHEETS FOR CROSS SECTIONS AS NOTED "A-A", "B-B"

LEGEND:	
---	PROPERTY LINE
---	TOP OF BANK
---	TOE OF SLOPE
---	STORM DRAIN STRUCTURE / PIPE
---	CHAINLINK FENCE
---	STOCKAGE FENCE W/ GATE
---	EXISTING FENCE
#	CROSS-SECTION IDENTIFIER (REFER TO TYPICAL SECTIONS SHEET)
▨	EXIST. WETLAND IMPACT AREA
▨	OPEN WATER
▨	DETENTION AREA
▨	BERM - MAINTENANCE ACCESS
▨	BERM - PUBLIC RECR. TRAIL
▨	ACCESS ROAD / PUBLIC PARKING
▨	EXISTING PAVEMENT
▨	UNDISTURBED LANDS AREA



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NUMBER	REVISIONS	DATE
4	REVISED DS#3 AND PIPE SIZE PER L.C.	08/13/2018
3	GENERAL REVISION	02/06/2018
2	REVISION PER LEE COUNTY REVIEW	02/03/2017
1	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
 LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
VERTICAL SCALE	HORIZONTAL SCALE



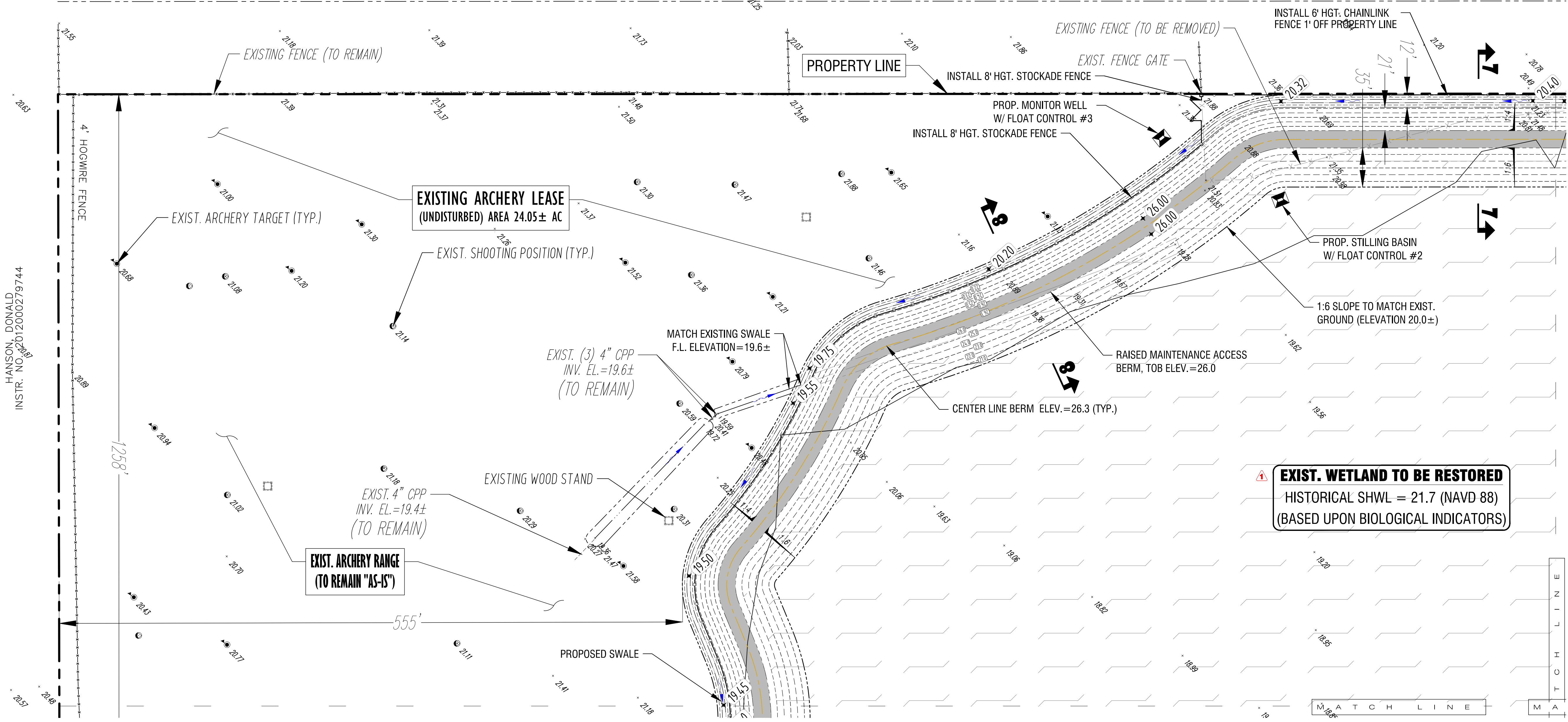
6200 Whiskey Creek Drive
 Fort Myers, FL. 33919
 Phone: (239) 985-1200
 Florida Certificate of
 Authorization No.1772

GRADING & DRAINAGE PLAN
 SOUTHEAST QUARTER

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW:
 RICHARD E. BRVANSKI, P.E.
 FLORIDA PROFESSIONAL ENGINEER
 REGISTRATION #42339
 DATE: _____

CAD FILE NAME:	DRAWING NO.:
13046.GDP	
PROJECT NO.:	SHEET NO.:
2013046	8

December 07, 2018



EXIST. WETLAND TO BE RESTORED
HISTORICAL SHWL = 21.7 (NAVD 88)
(BASED UPON BIOLOGICAL INDICATORS)

REFER TO TYPICAL SECTIONS SHEETS FOR
CROSS SECTIONS AS NOTED "▲# ▲#"

LEGEND:	
--- PROPERTY LINE	EXIST. WETLAND IMPACT AREA
- - - TOP OF BANK	OPEN WATER
--- TOE OF SLOPE	DETENTION AREA
--- STORM DRAIN STRUCTURE / PIPE	BERM - MEAINTEANCE ACCESS
○ CHAINLINK FENCE	BERM - PUBLIC RECR. TRAIL
□ STOCKAGE FENCE W/ GATE	ACCESS ROAD / PUBLIC PARKING
--- EXISTING FENCE	EXISTING PAVEMENT
▲# ▲# CROSS-SECTION IDENTIFIER	UNDESTRUCTED LANDS AREA
(REFER TO TYPICAL SECTIONS SHEET)	

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY VZ	02/18/15
CHECKED BY REB	DATE DECEMBER/18
VERTICAL SCALE N/A	HORIZONTAL SCALE 1"=50'



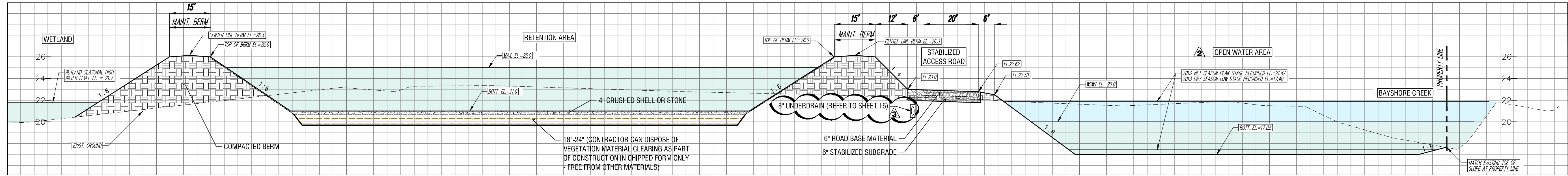
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Phone: (239) 985-1200
Florida Certificate of
Authorization No.1772

GRADING & DRAINAGE PLAN
SOUTHWEST QUARTER

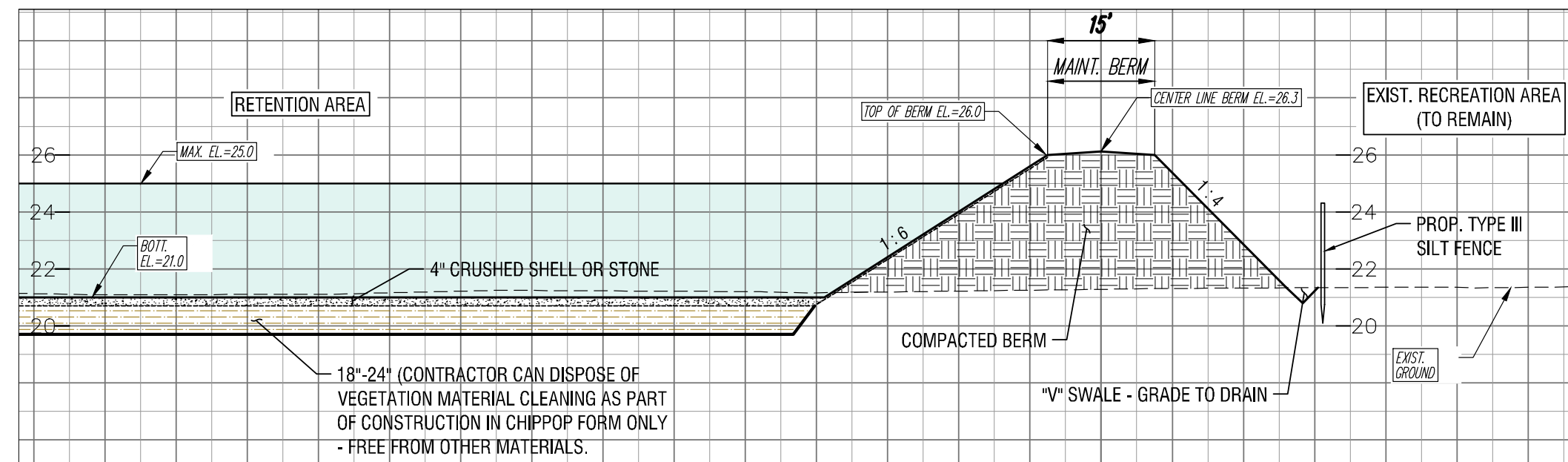
THESE DRAWINGS ARE NOT APPROVED
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RICHARD E. BRYLANSKI P.E.
FLORIDA PROFESSIONAL ENGINEER
REGISTRATION #42339
DATE:

CAD FILE NAME:	DRAWING NO.:
13046.GDP	
PROJECT NO.:	SHEET NO.:
2013046	9

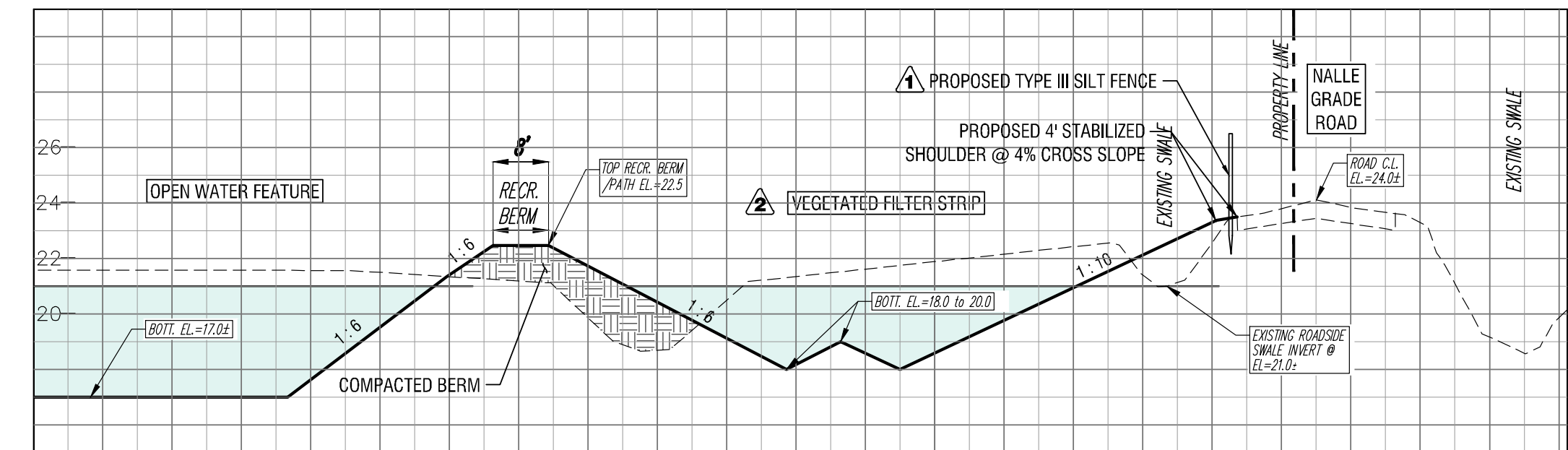
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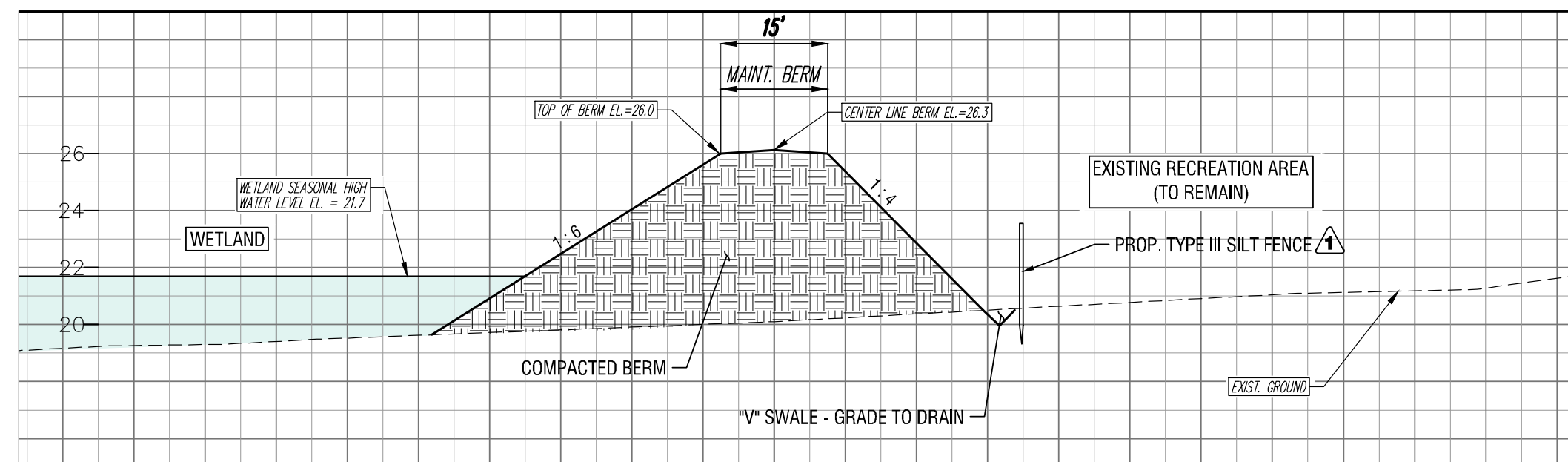
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SCALE: HOR.: 1" = 20' VERT. 1" = 5'



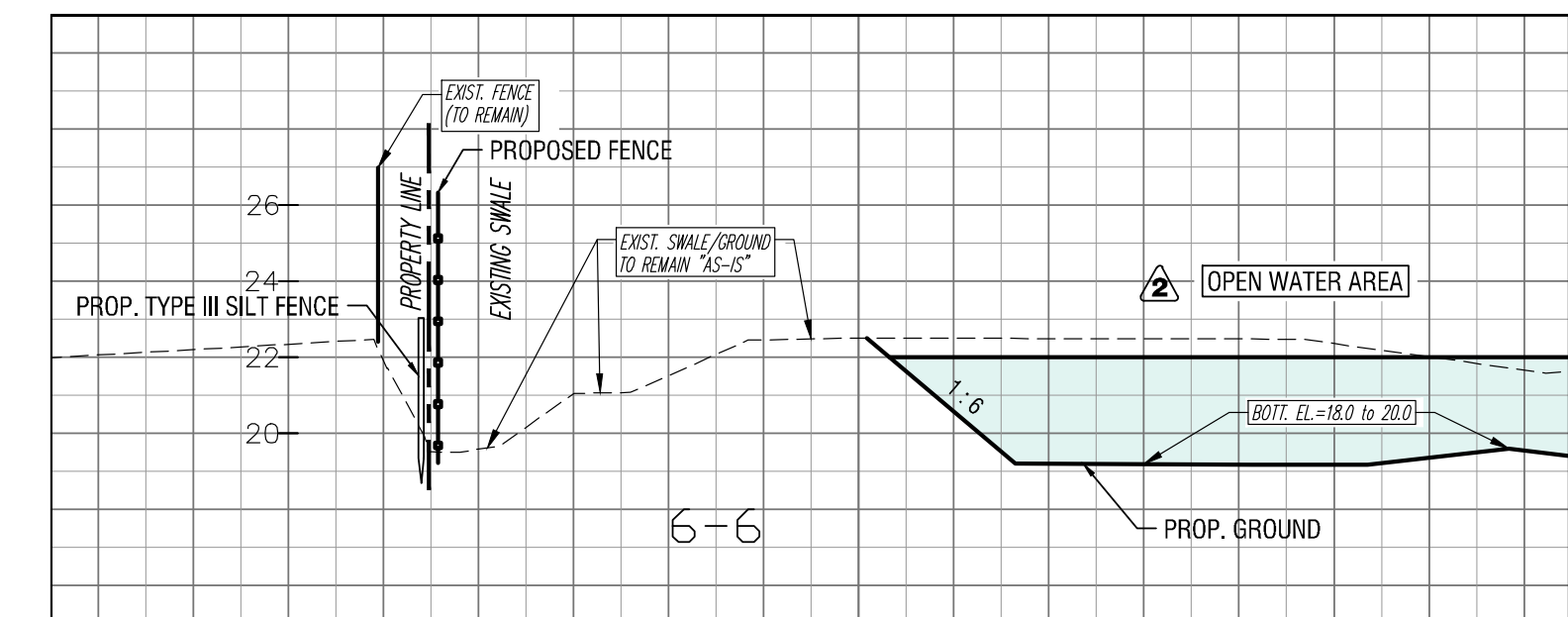
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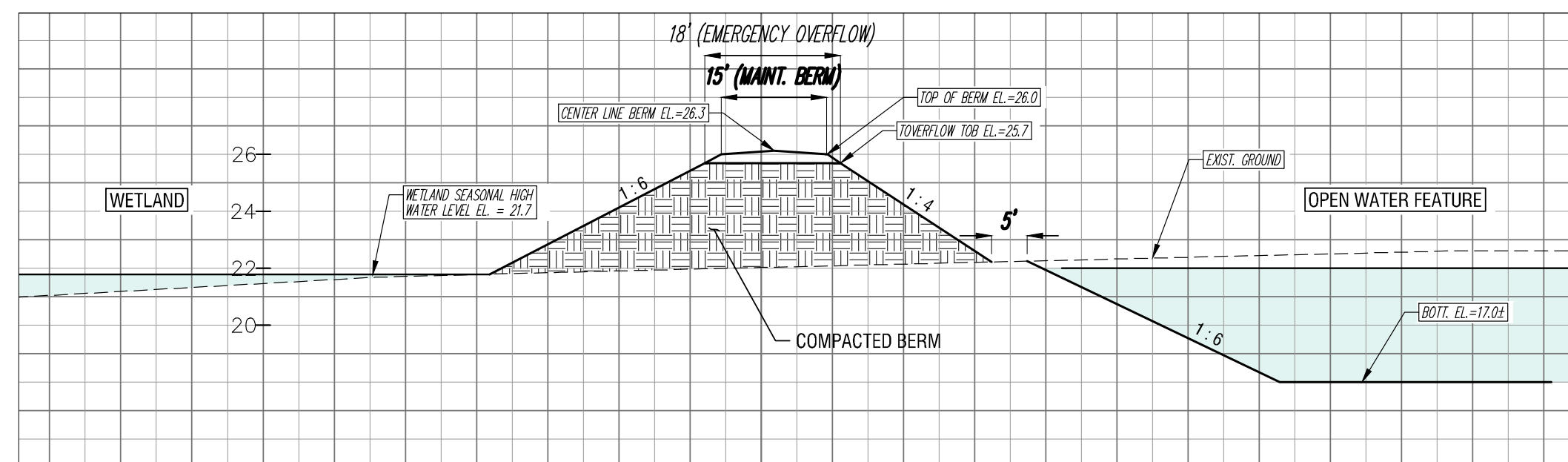
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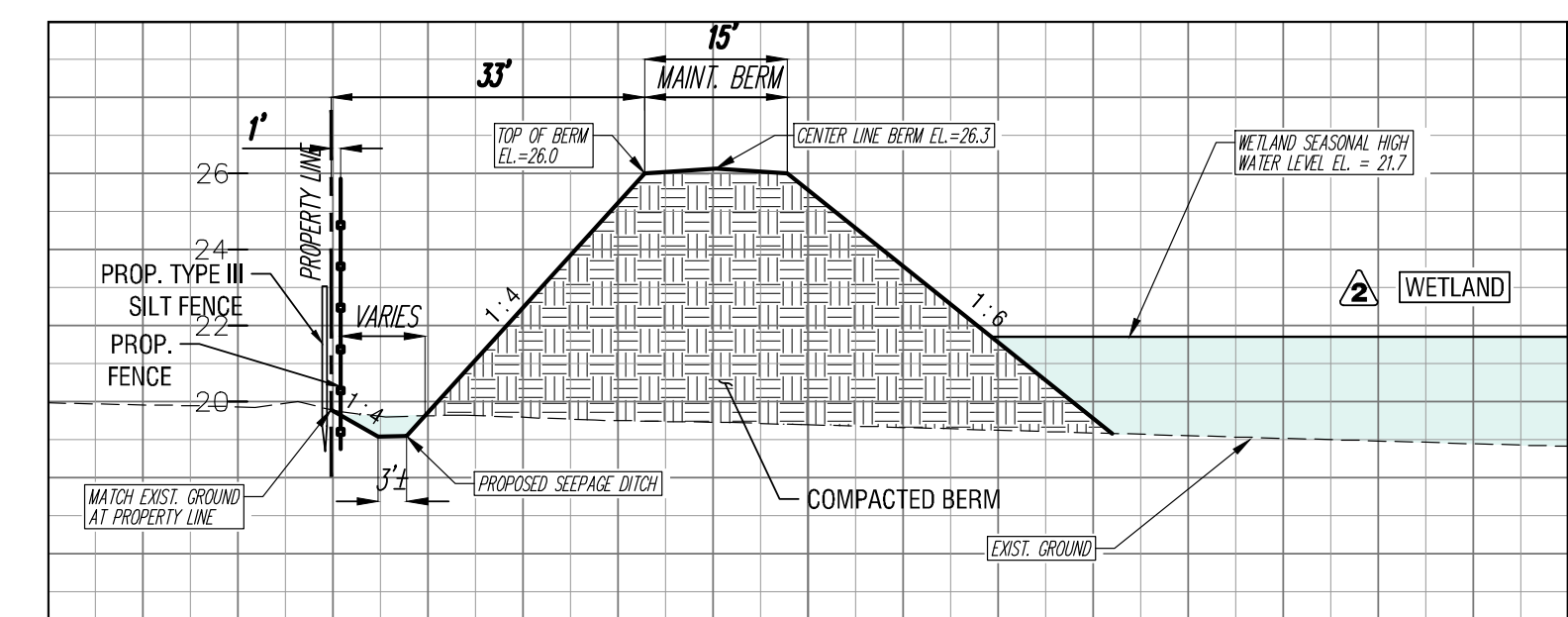
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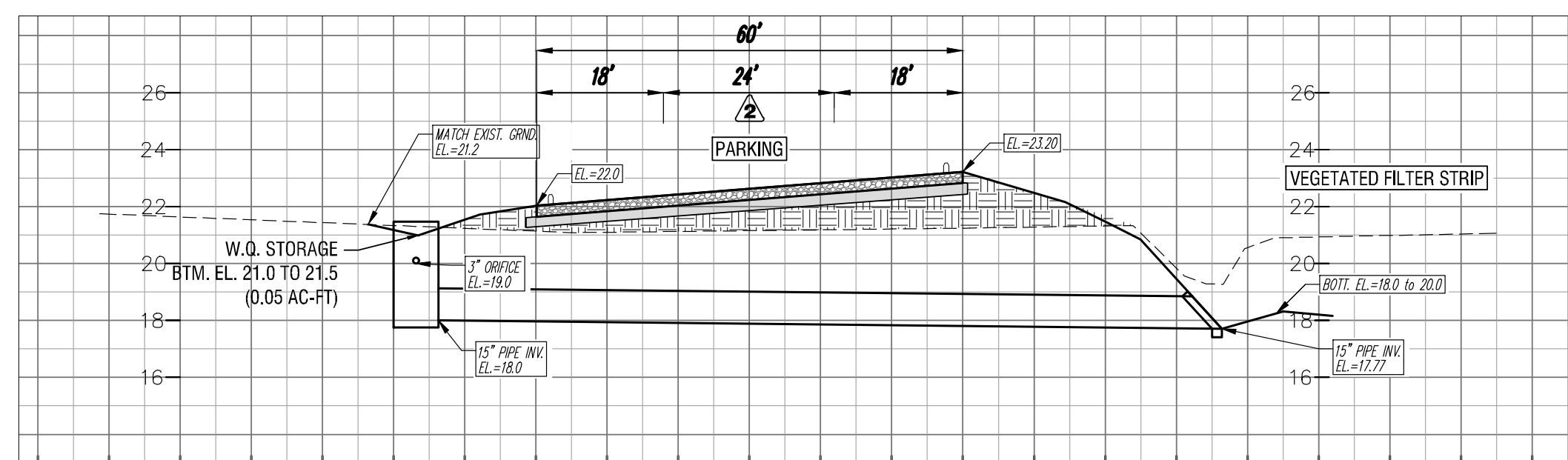
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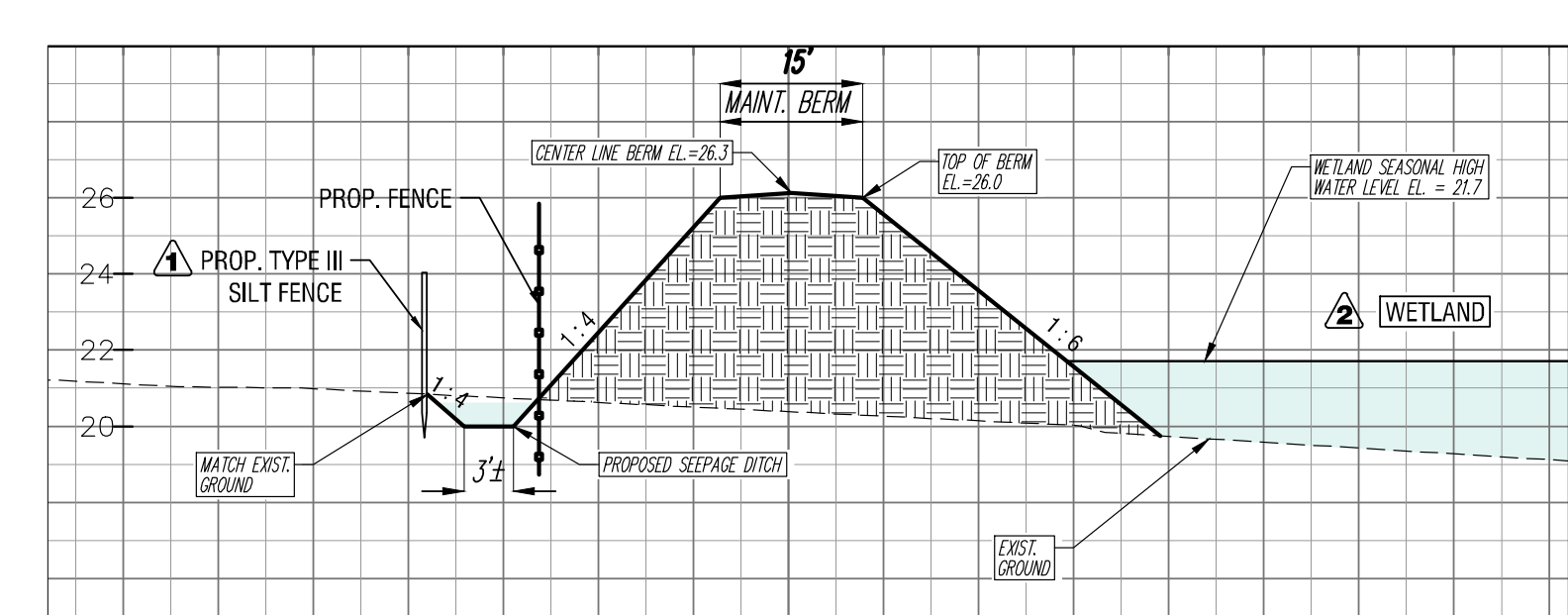
SECTION 4-4
SCALE: HOR.: 1" = 20' VERT. 1" = 5'



SECTION 7-7
SCALE: HOR.: 1" = 20' VERT. 1" = 5'



SECTION 9-9
SCALE: HOR.: 1" = 20' VERT. 1" = 5'



SECTION 8-8
SCALE: HOR.: 1" = 20' VERT. 1" = 5'

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Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
VERTICAL SCALE	HORIZONTAL SCALE



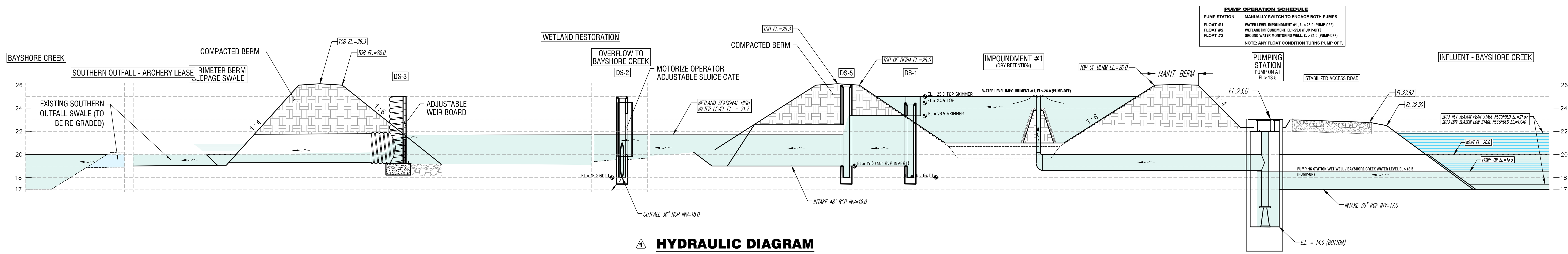
6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No.1772

TYPICAL SECTIONS

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW:
RICHARD E. BRYLANSKI P.E.
FLORIDA PROFESSIONAL ENGINEER
REGISTRATION # 42339
DATE

CAD FILE NAME:	DRAWING NO.:
13046.TSEC	
PROJECT NO.:	SHEET NO.:
2013046	10

December 07, 2018



HYDRAULIC DIAGRAM

PUMP OPERATION SCHEDULE	
PUMP STATION	MANUALLY SWITCH TO ENGAGE BOTH PUMPS
FLOAT #1	WATER LEVEL IMPOUNDMENT #1 EL=25.0 (PUMP-OFF)
FLOAT #2	WETLAND IMPOUNDMENT #1 EL=25.0 (PUMP-OFF)
FLOAT #3	GROUND WATER MONITORING WELL EL=21.0 (PUMP-OFF)
NOTE: ANY FLOAT CONDITION TURNS PUMP OFF.	

VERTICAL SINGLE SUCTION AXIAL FLOW PUMP SPECIFICATIONS

1.0 SCOPE

This specifications covers supply and installation of Vertical Single End Suction Axial Flow Pump and Discharge Piping designed specifically for municipal, commercial and industrial water handling applications. Pump(s) shall be manufactured by FPI Inc. of Pompano Beach, FL, or pre-approved equal.

- 1.1 **Qualifications** - The pump manufacturer shall be a company actively engaged and specialized in the manufacture of the type of specified pump(s) in this section. Design of the pump(s) shall be under direct supervision of a Registered Professional Engineer in the State of manufacture and experienced in the design of pumps described in this section. Pump manufacturer must be ISO 9001 Certified for the manufacture of Axial Flow Pumps. ISO Certificate must be included with bid.
- 1.2 **Performance Test** - The pump(s) shall be given a certified performance test at the factory and approved before shipment. All performance testing shall be in accordance with Hydraulic Institute "Vertical Pump Tests" ANSI/HI 2.6-2000. Factory testing facility shall be in the continental United States. Proposed testing faculty shall be submitted as a shop drawing.

2.0 OPERATING CONDITIONS

Number of Pump(s)	2	
Min Capacity	4700 +/-	GPM
Design Capacity	5000	GPM
Max Capacity	5300 +/-	GPM
Min suction water elevation	18.5	ft. (GNVD)
Design suction water elevation	19.5	ft.
Max suction water elevation	21.0	ft.
Min discharge water elevation	25.0	ft.
Design discharge water elevation	25.0	ft.
Max discharge water elevation	25.0	ft.
Min TDH	7.0	ft.
Design TDH	8.5	ft.
Max TDH	9.5	ft.
Efficiency at min capacity	78	%
Guaranteed Efficiency at design point	81	%
Efficiency at max capacity	78	%

The pump(s) performance shall be non-overloading for the design H.P. of the furnished driver. Driver and related components shall have not less than 1.15 S.F.

- 2.1 **Speed** - The speed of the pumps shall not exceed 880 Revolutions per minute.
- 2.2 **Reverse Rotation** - Pump shall withstand, with no damage, full rotational speed caused by subject pump to reverse flow. Head used to determine this reverse speed shall be calculated from the highest pipe discharge elevation and lowest pump intake water elevation. Both the pump and its connected electric motor shall be capable of full reverse speed when acting as a turbine be reverse water flow.

3.0 MATERIALS

Material types - Materials not specifically described shall conform to the latest approved industry standard(s) covering appropriated class of types of materials. Material types used in the manufacture of the pump(s) shall conform to the following:

COMPONENT	MATERIAL TYPE	SPECIFICATION
Mounting Plate	Structural Steel	ASTM A-36
Column & Elbow	Corten	ASTM A-242
Steel Plate	Corten	ASTM A-242
Cold Rolled Steel Bars		AISI/A-1018
Hot Rolled Steel Bars		ASTM A-36
Stainless Steel Plate	316 Type L	
Pipe	Schedule 80	A-53
Propeller Shafting	416 SS	ASTM 276 or
Pump Shafting	Grade 1045	ASTM A-108
Intake bell	Corten	ASTM A-242
Bearings	Bronze	ASTM B 62

4.0 PUMP CONSTRUCTION

- 4.1 **Pump/Diffuser Bowl** - The Intake Bell shall be made of ASTM A242 steel plate, with a minimum wall thickness of 3/8 in and shall be flanged for mating to the propeller casing. Intake bell diameter shall be no less than 1-1/2 times the impeller diameter. It shall be supported entirely by the propeller casing. It shall contain a guide lug and vanes to support a water lubricated tail bearing. The propeller casing shall be made of ASTM A242 steel and shall be flanged for mating to the suction bell. It shall provide a close running tolerance to the propeller. This unit may be combined with the diffuser bowl to form a single unit. The diffuser bowl shall be made of ASTM A242 steel plate. It shall contain a tapered diffuser cone and straightening vanes. It shall be welded as one piece with the propeller casing.
- 4.2 **Propeller** - the propeller and hub shall be manufactured from ASTM A242 steel, (or 316 L Stainless steel as an option) with a minimum wall thickness of 3/8 in. The propeller shall be attached to the shaft by a locking nut and key. The propeller bore shall be tapered for ease of assembly and disassembly. The propeller blades shall be ground and polished for maximum hydraulic efficiency. The blades shall be chamfered on both sides for full penetration welding. The periphery of the blades shall be machined for a close running fit with the impeller bowl. The complete propeller shall be statically balanced after manufacturing.
- 4.3 **Pump Column and Discharge Flow** - The pump column and discharge elbow shall be made of ASTM A242 steel plate, with a minimum wall thickness of 1/4 in. The elbow shall be of the long radius, with the centerline radius not less than 1 times the nominal pipe diameter. The diameter of the pump column shall be sufficient size to allow ready removal / reinsertion of the pump assembly.
- 4.4 **Propeller Shaft** - the propeller shaft shall be of ASTM A-276, Type 416, stainless steel. Shafting shall be designed so that any necessary vertical adjustment of impeller can be made from the operation floor level, without interfering with shaft alignment. Also, provide for removal of propeller from below without disassembly of pump above propeller bowl.
- 4.5 **Pump Shaft** - The pump line shaft shall be steel, grade 1045, conforming to ASTM A-108. It shall be sized to safely transmit the horsepower involved, and to prevent vibration.
- 4.6 **Lifting Lugs** - Major pump components shall be furnished with lifting lugs to facilitate handling and designed and arranged to allow safe handling of pump components singly or collectively as required during shipping, installation and maintenance.
- 4.7 **Nuts and Bolts** - Bolts used in assembling pump and its supporting members shall be of Stainless Steel. Only hexagonal bolts and nuts shall be used. Washers shall be of Stainless Steel.
- 4.8 **Name Plate** - A stainless steel pump name plate shall be furnished stating the manufacturers name and location, pump serial number design RPM, rated gallons per minute capacity at the specified TDH. The name plate shall be located in a readily visible location.
- 4.9 **Hardware** - All machines bolts, nuts and cap screws shall be hex head type. Hardware and parts requiring special tool shall not be used.

5.0 WELDING - pump and pipe welding shall be continuous and full penetration inside and out. All slag shall be removed and undercutting shall not exceed 15% of the material thickness.

6.0 PAINTING - Pump interiors and exteriors shall be painted pump shall be coated with bitumastic enamel equal to Zophar Triple A coal tar enamel (minimum 6 mils), or as an option sandblasted to paint with the manufacturers paint system, or as specified. As a minimum, the manufacturers specifications with two (2) coats (minimum 6 mils) of a high solids epoxy paint system similar to Ameron Amerlock 400 and Amercoat 450 or approved equal. Alternate paint systems are acceptable provided that the pump manufacturer can demonstrate corrosion resistance equal to the high solids epoxy system.

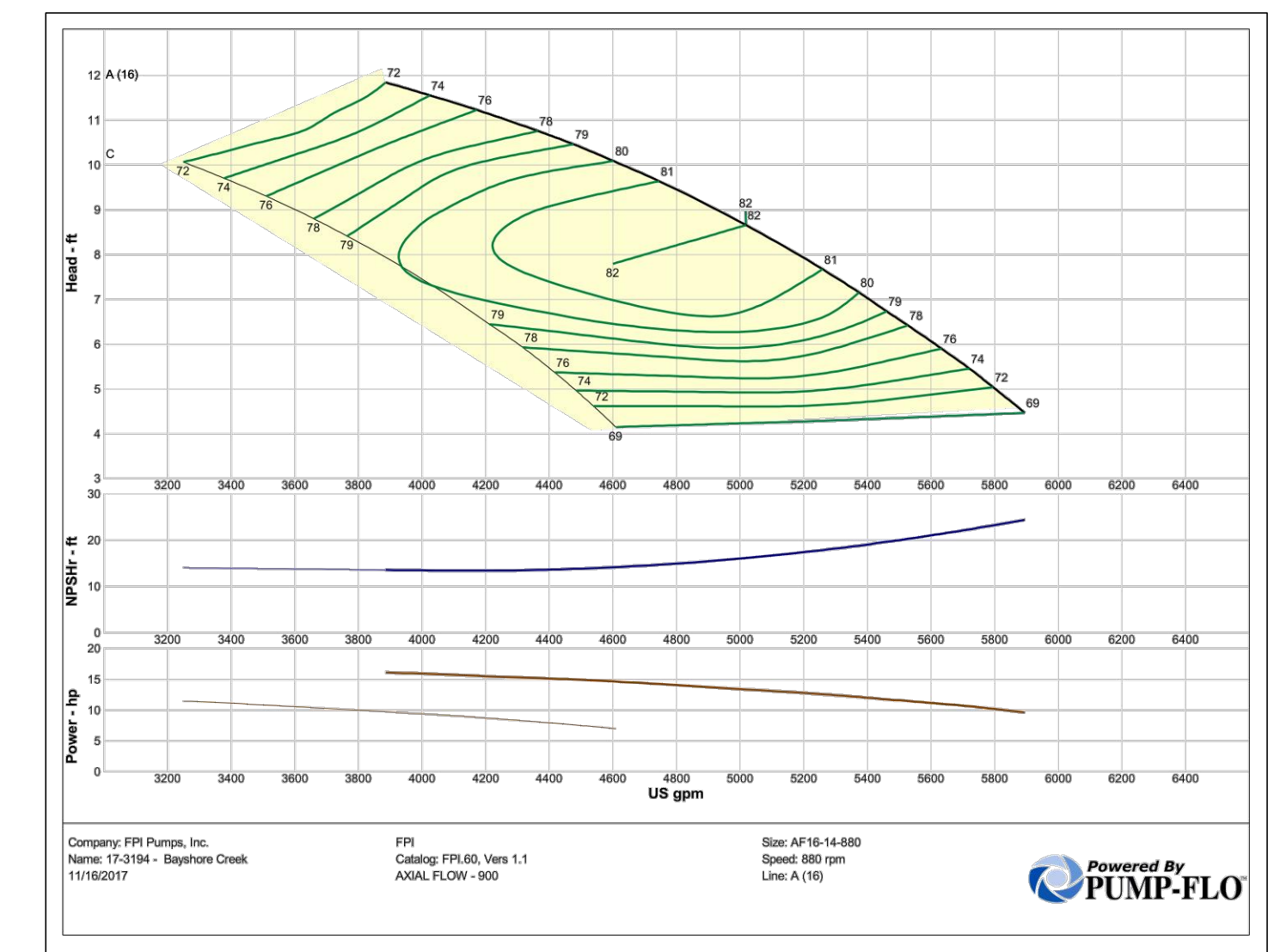
7.0 INSPECTION -The pump manufacturer shall arrange for the inspection by the Engineer of the pump parts during manufacturing to assure compliance with these specifications. The owners representative shall have the option of witnessing the pump performances testing.

8.0 DRIVE EQUIPMENT

- 8.1 **Electric Motor Mount** - The motor mount shall be made to support the weight of the electric motor plus any loads imposed on it plus safety factor to account for shock loads.
- 8.2 **Electric Motors** - Motors shall be vertical hollow (or solid) shaft electric motor as manufactured by Baldor or Reliance or approved equal with minimum 20 HP and 900 RPM/3Ph/60Hz/460V. The motor shall be a submersible electric motor and shall connect to the pump shaft using a rigid shaft coupling.

9.0 EXECUTION

- 9.1 **Field Testing** - Field vibration and operation testing shall be performed on all pumps. Vibration tests shall be made at maximum, intermediate and minimum heads and speeds (as available) for the assembled pumping units in place after installation. Vibration tests shall be conducted in the presence of the engineer in accordance with the procedures outlined in the applicable standards of the ISO 10816-3:1998 and maximum vibration shall be within the limits set forth therein. In the event vibration exceeds the specified limits, the pump manufacturer shall make all required balancing and frame adjustments to bring the equipment within the permissible limits prior to pump approval. The test shall be conducted using a Model 687A01 Handheld Vibration Meter by PCB Piezotronics Inc. or equal. Upon completion and within two weeks of the field testing the manufacturer shall submit three bound copies of the field test report.
- 9.2 **Inspection** - The pump manufacturer shall arrange for the inspection by the Engineer of the pump parts during manufacturing to assure compliance with these specifications.
- 9.3 **Warranty** - The pumps shall be warranted for five (5) years. Warranty shall include both the pump and the motor. Warranty shall go into effect from the date of acceptance by the owner. Defects or failures shall be promptly replaced with new parts by the manufacturer at no additional cost to the owner within the warranty period. Exceptions shall include instances where it could be conclusively proven that failure was prior to or after the acceptance by the owner and not as a result of improper operation of the equipment.



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NUMBER	REVISIONS	DATE
1	REVISION OF PUMP SPECIFICATIONS	02/06/2018
2	REVISION PER LEE COUNTY REVIEW, ADDED HYDROLOGIC DIAGRAM	02/03/2017
3	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
VERTICAL SCALE	HORIZONTAL SCALE

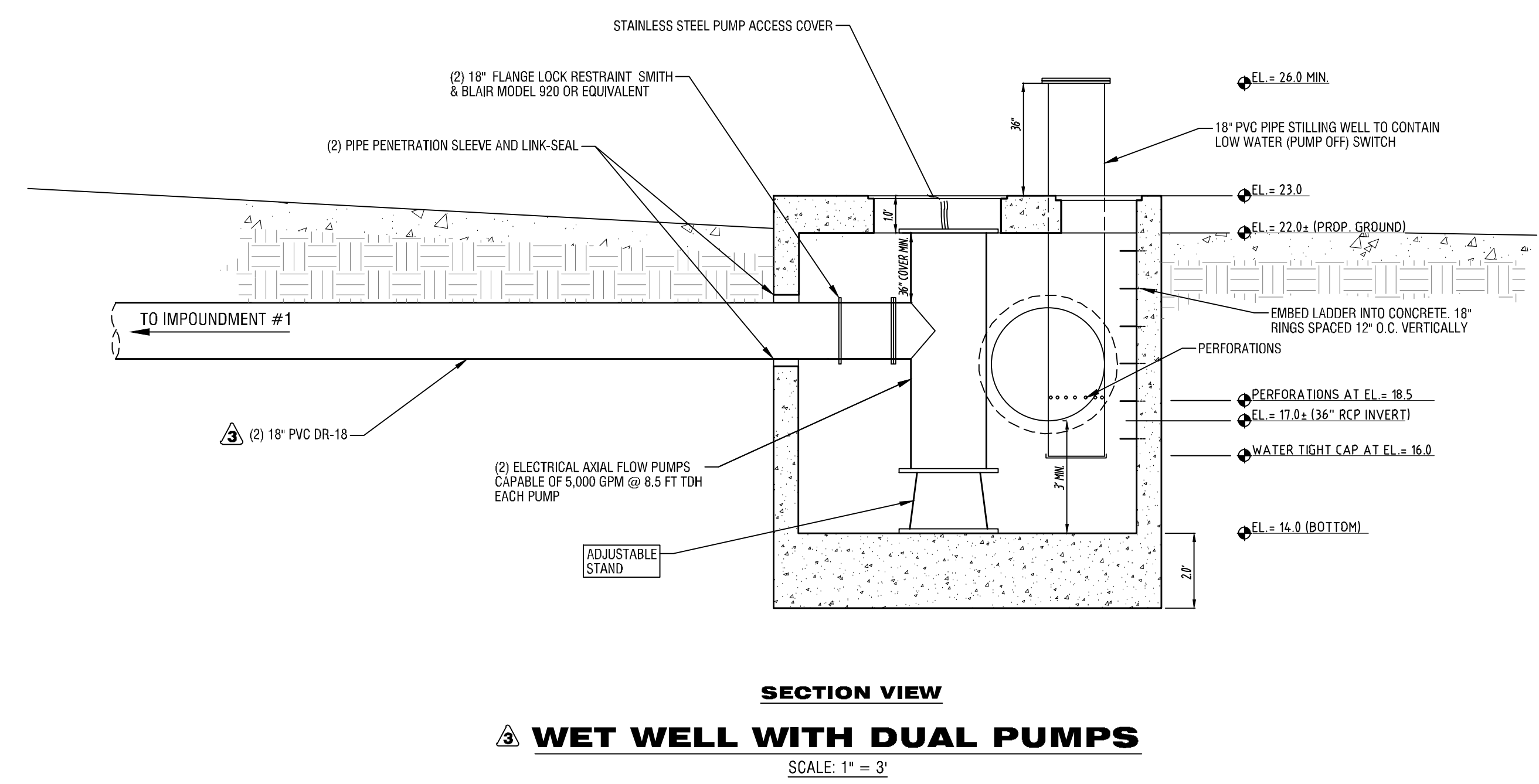
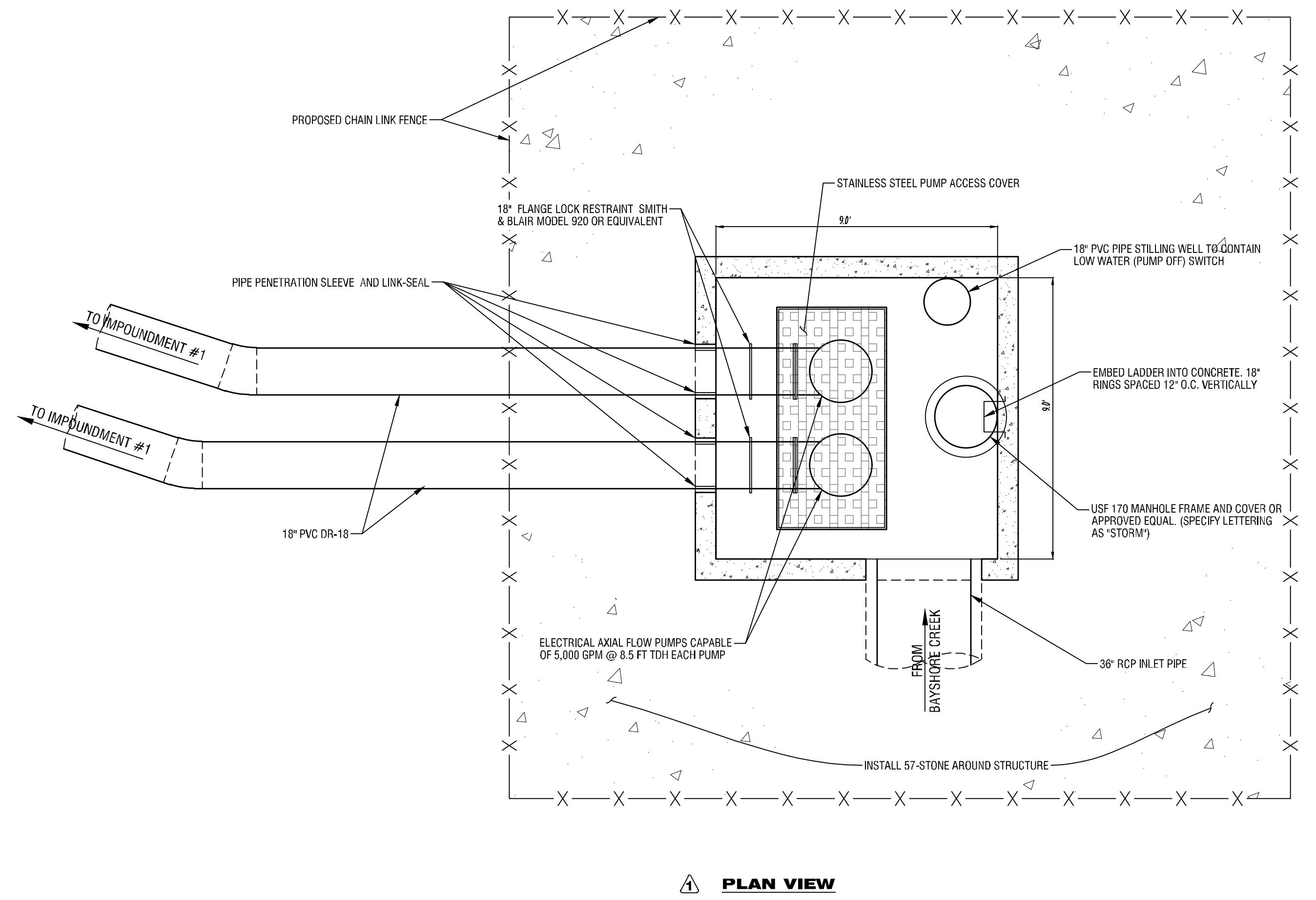
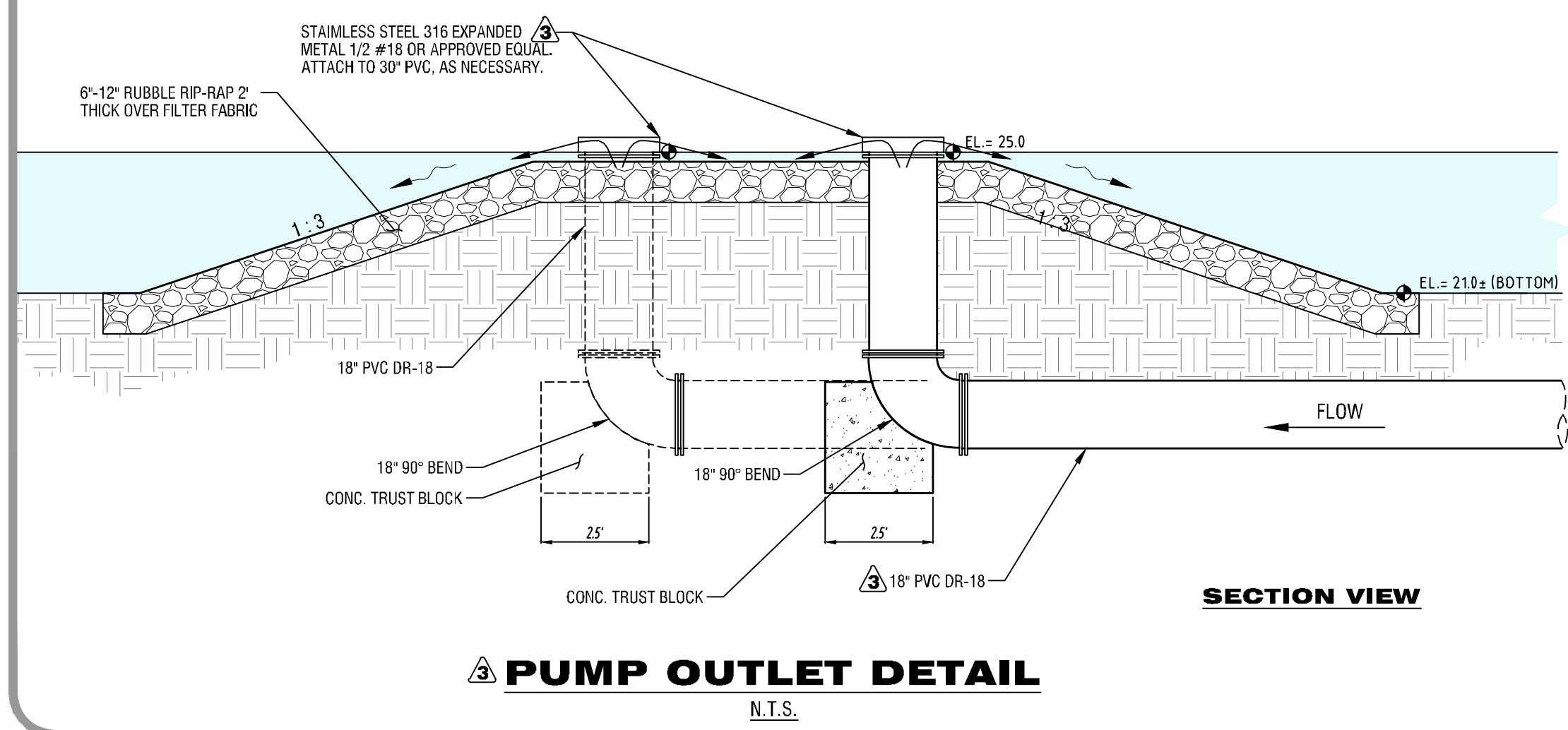
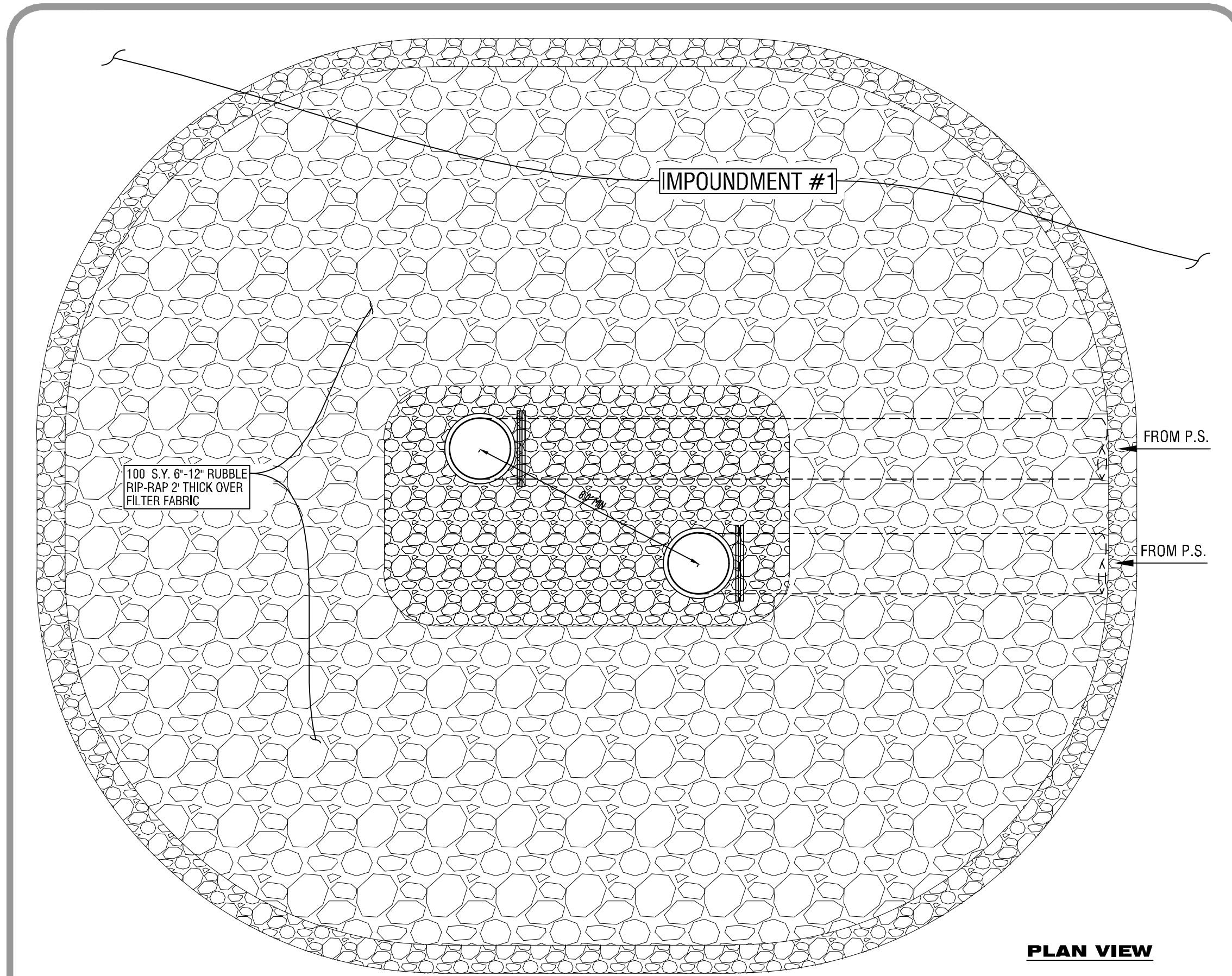
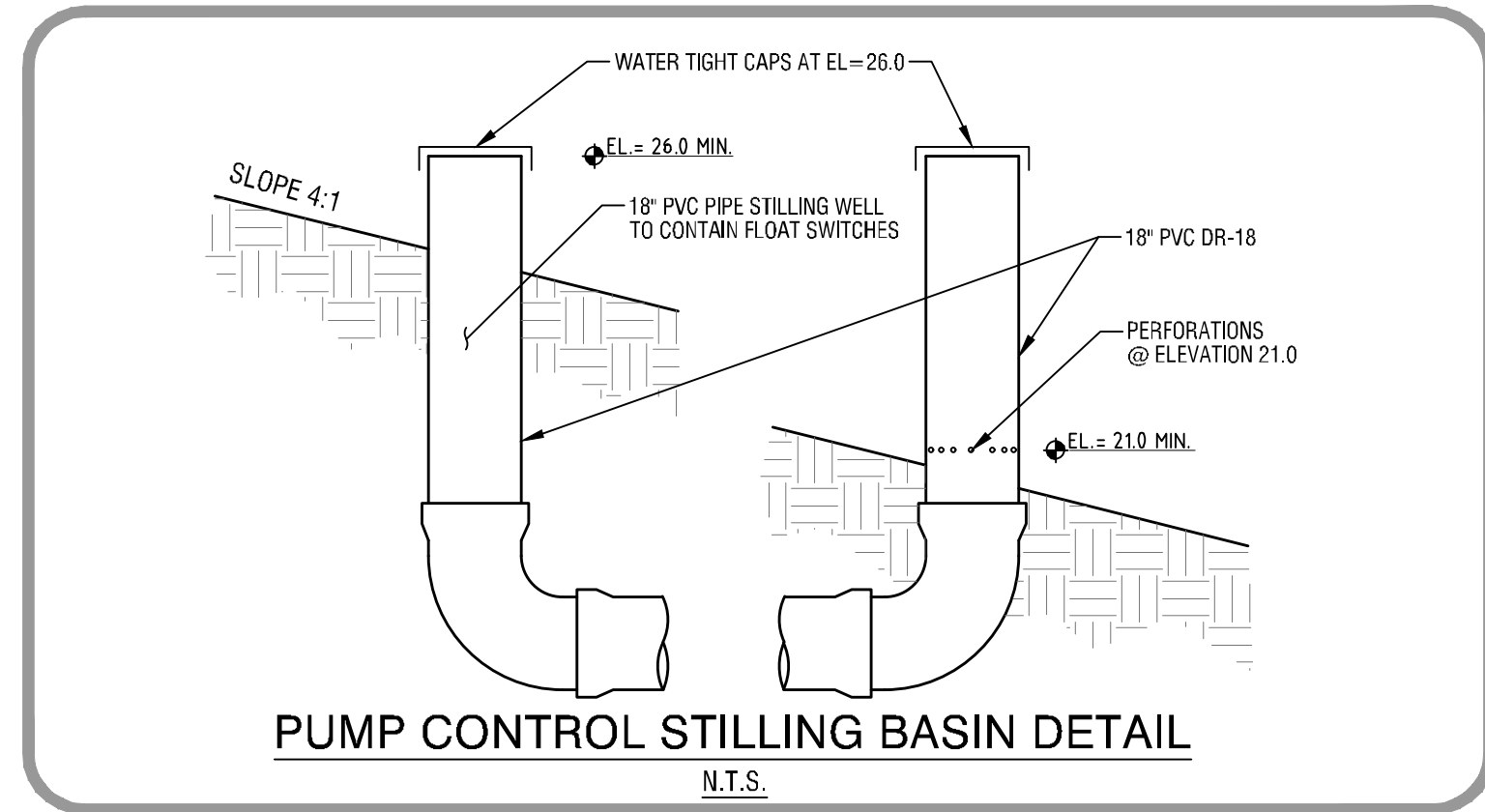
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HYDRAULIC DIAGRAM AND NOTES

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DATE:	PROJECT NO.:	SHEET NO.:
	2013046	11A

December 07, 2018



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NUMBER	REVISIONS	DATE
1	GENERAL REVISION	02/06/2018
2	REVISION PER LEE COUNTY REVIEW - ADDED THIS SHEET	02/03/2017
3	REVISION PER SFWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE 05/10/16
CHECKED BY	DATE DECEMBER/18
VERTICAL SCALE	HORIZONTAL SCALE N/A



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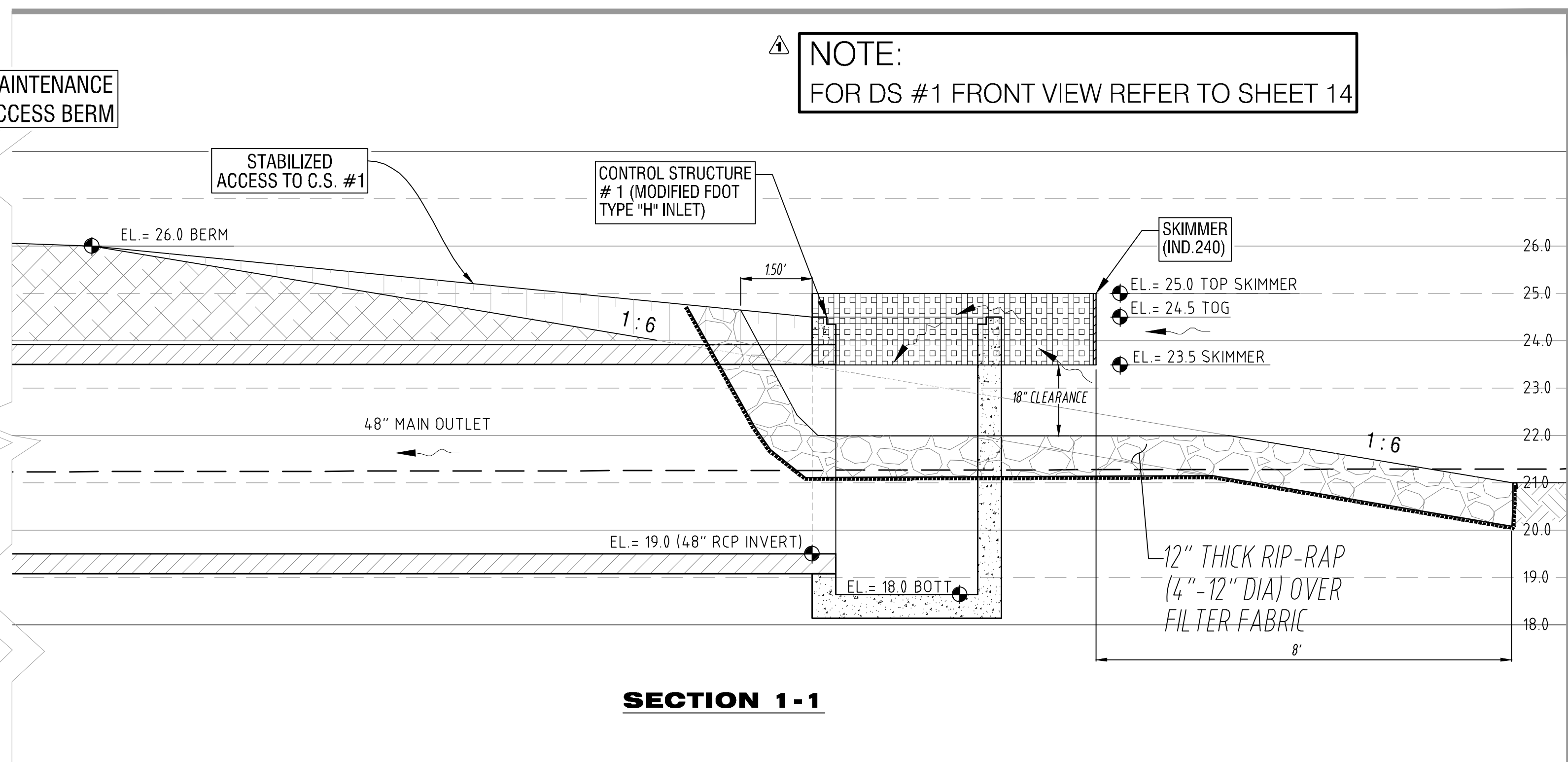
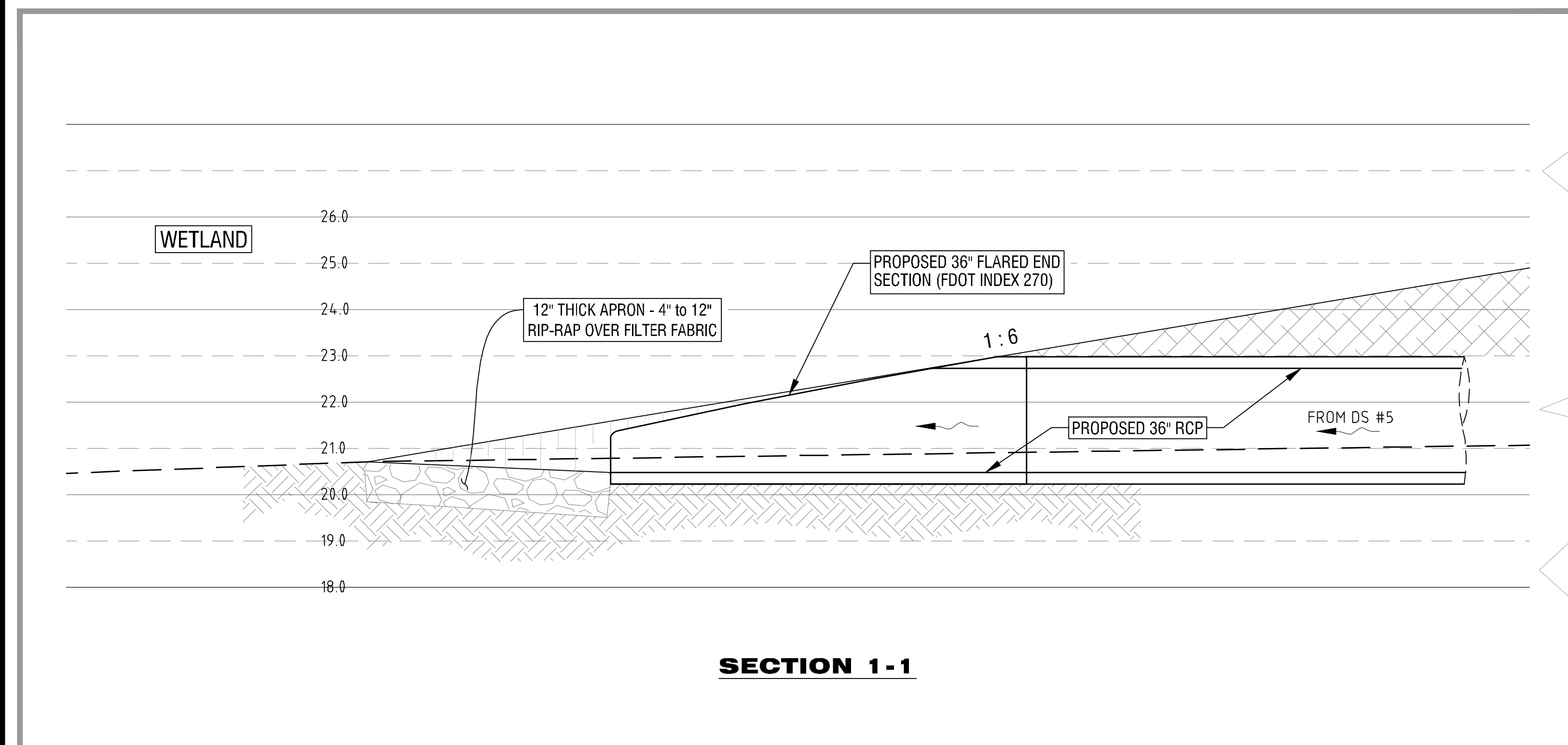
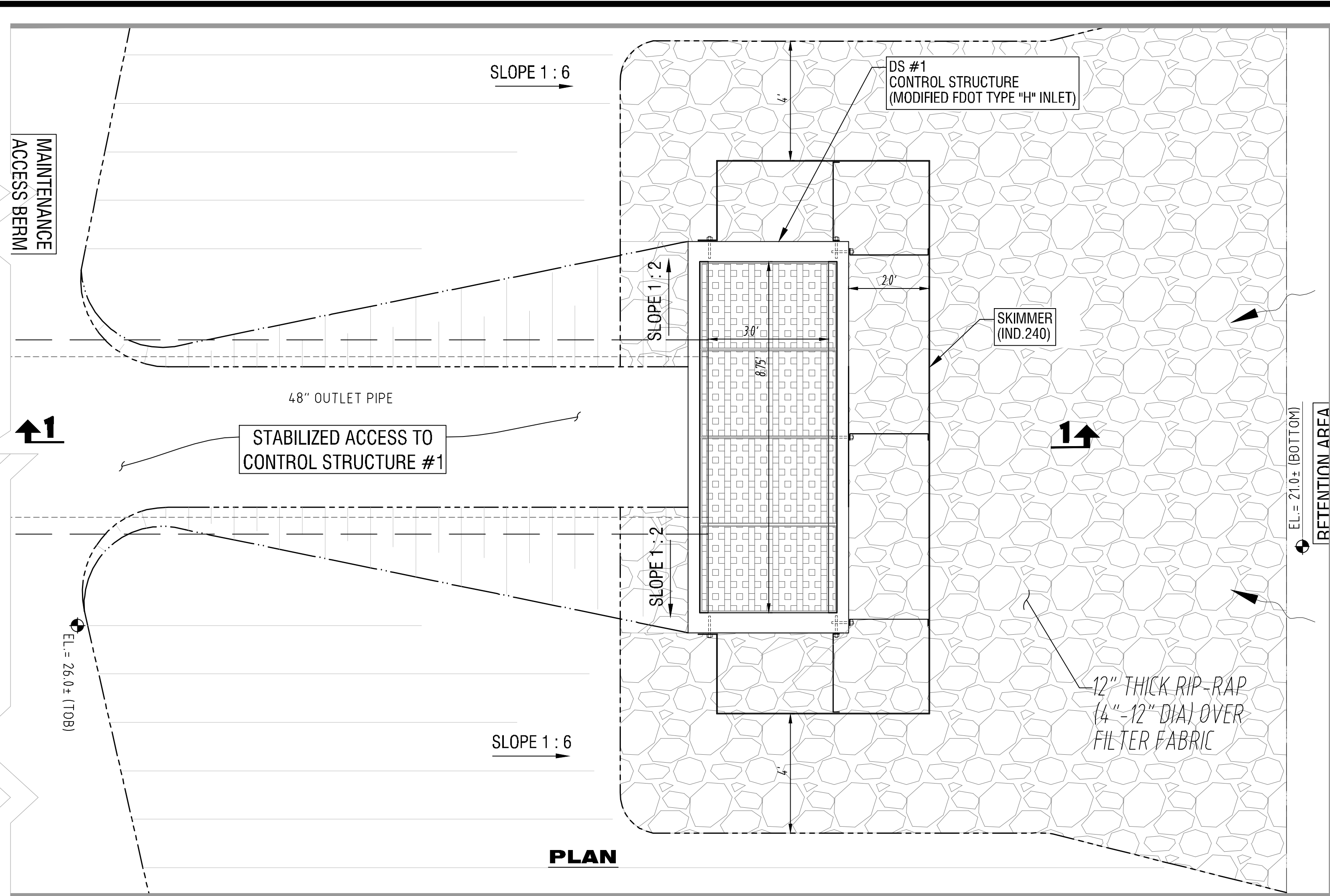
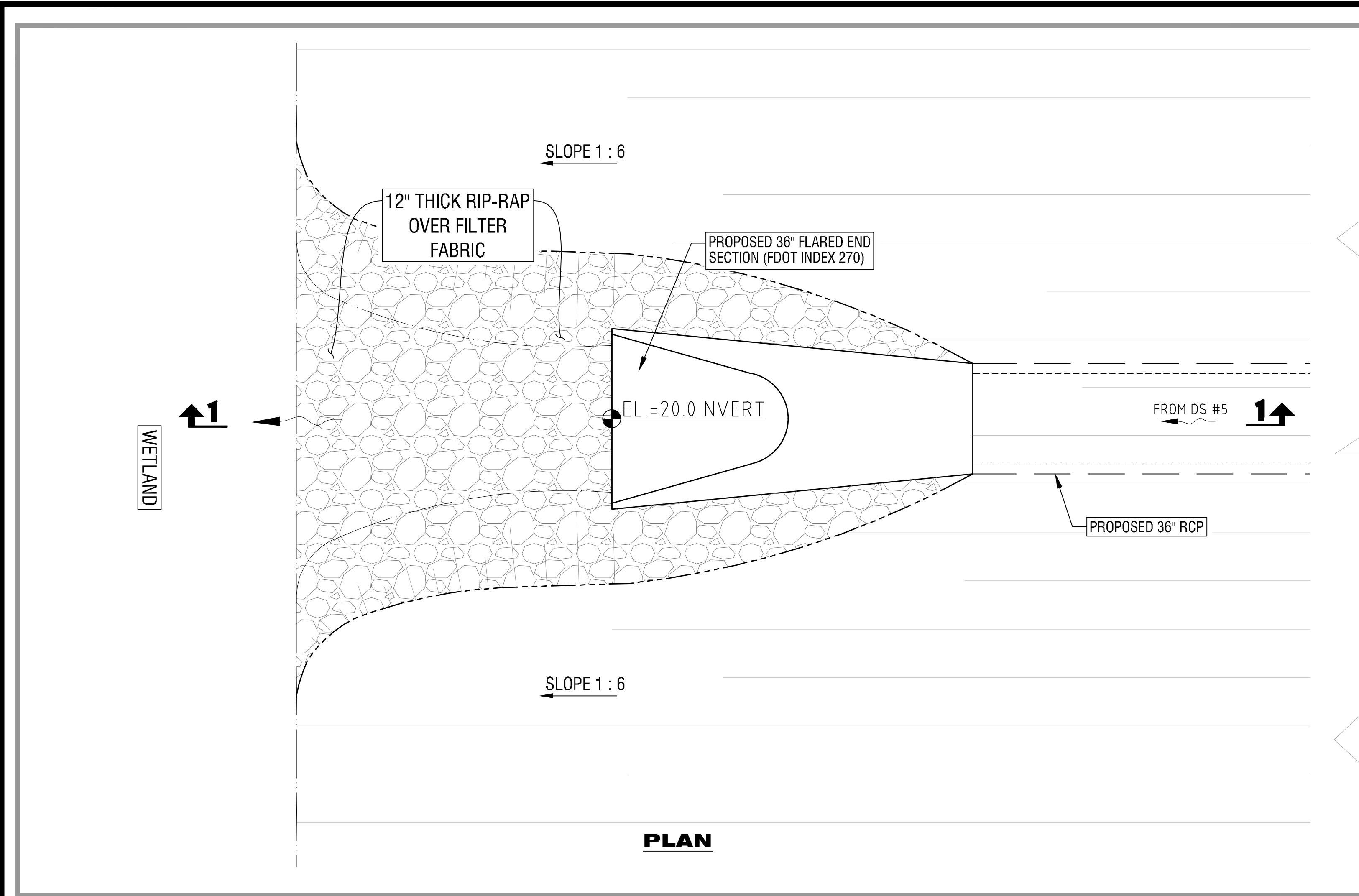
PUMPING STATION DETAILS

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REGISTRATION #42339
DATE

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PROJECT NO.:	SHEET NO.:
2013046	11B

December 07, 2018

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NOTE:
FOR DS #1 FRONT VIEW REFER TO SHEET 14

TYPICAL OUTFALL IN WETLAND

NTS

DS #1

SCALE: 1" = 2'

REVISION NUMBER	REVISIONS	DATE
1	REVISION PER LEE COUNTY REVIEW	02/03/2017
2	REVISION PER SFWMND REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	REB	DATE	JUNE/16
DRAWN BY	VZ	DATE	05/09/16
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	1" = 2'



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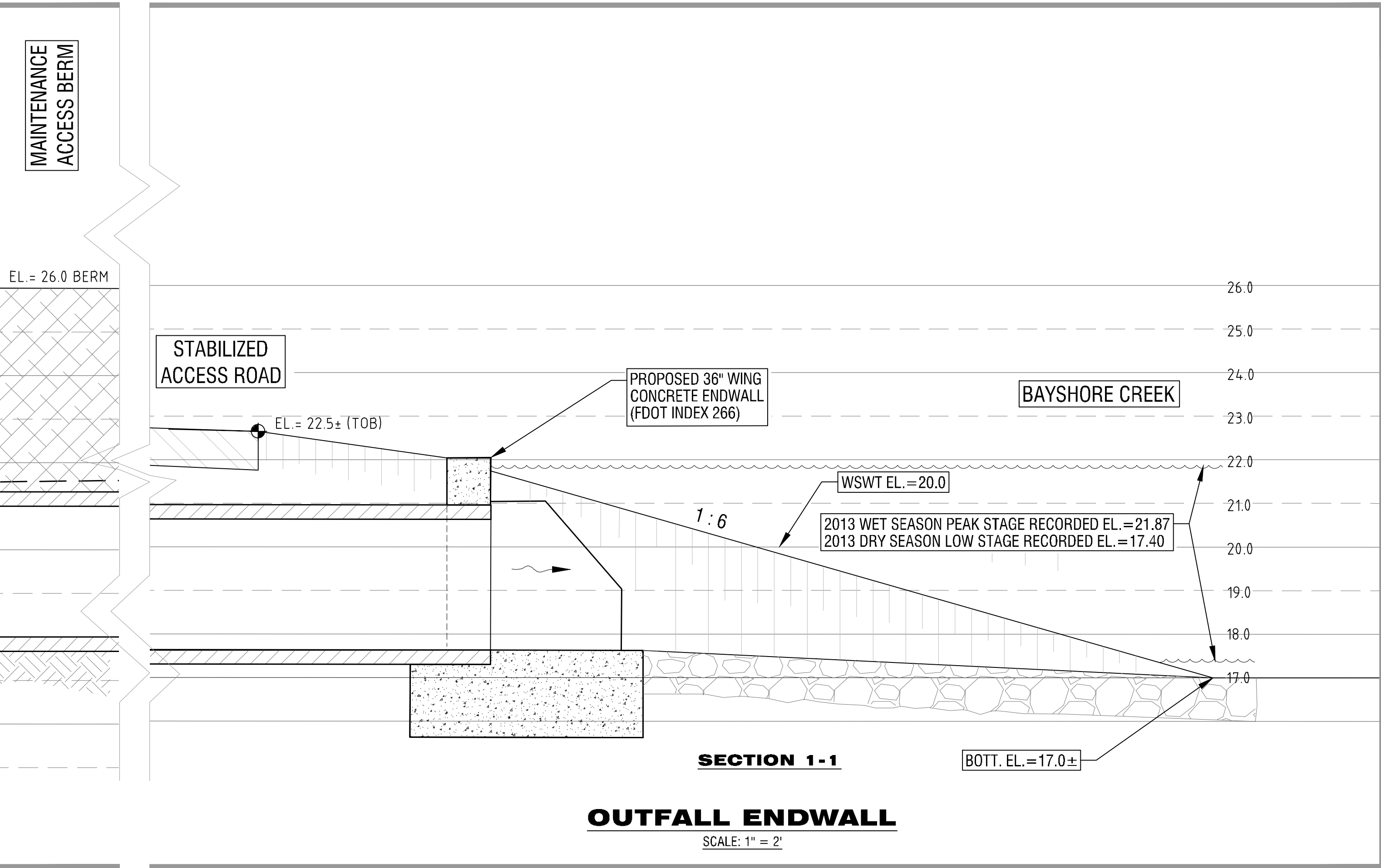
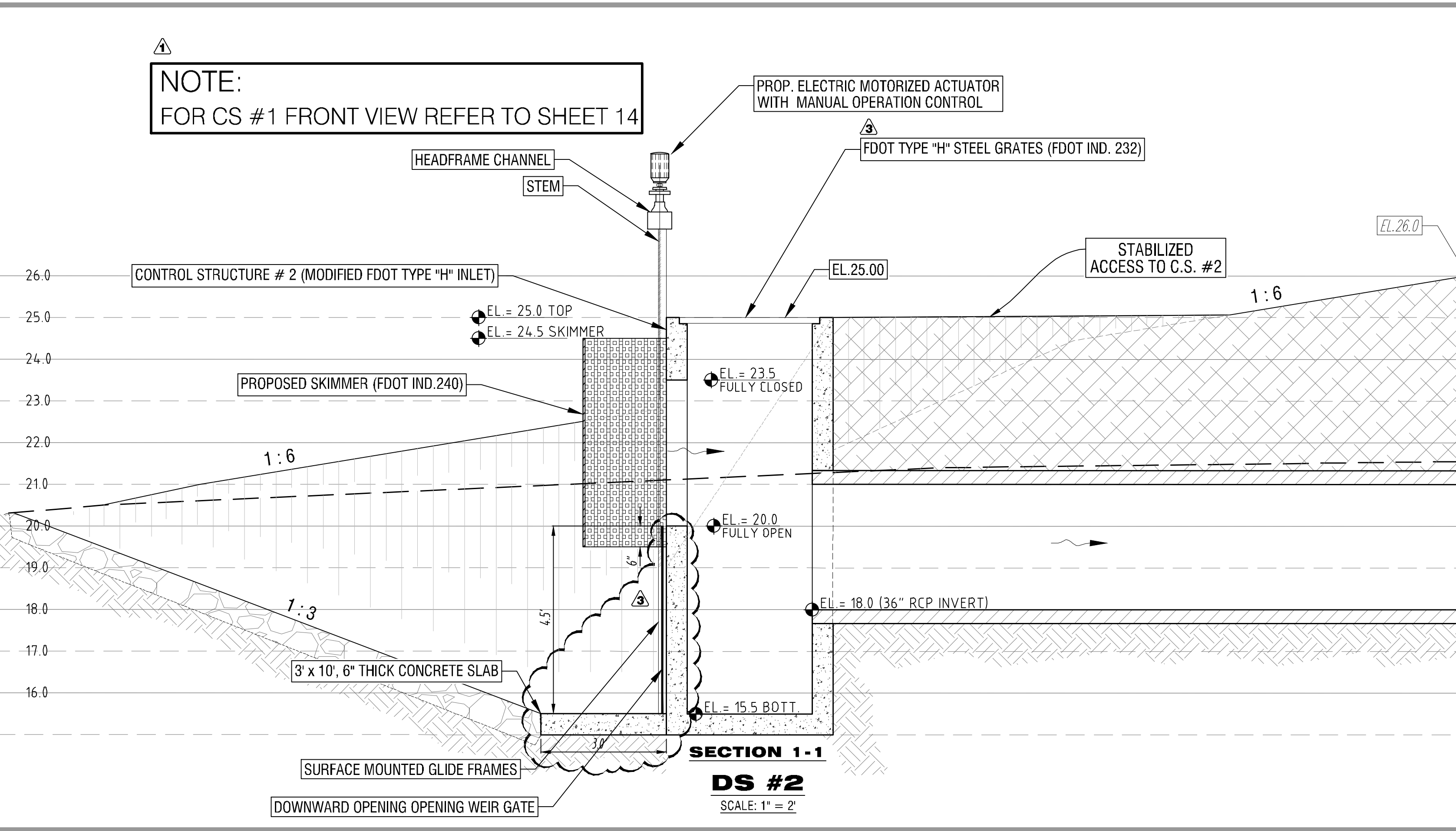
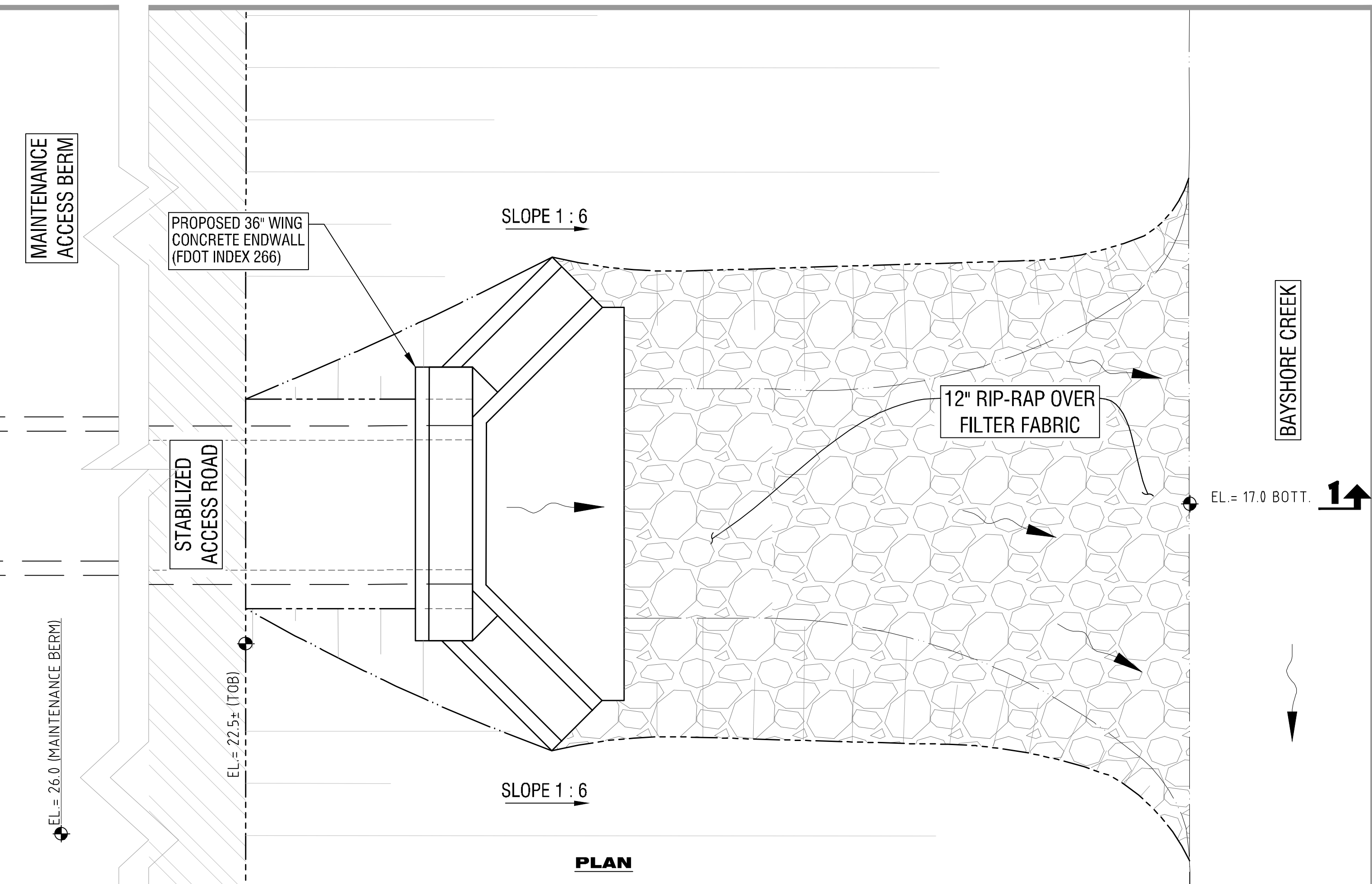
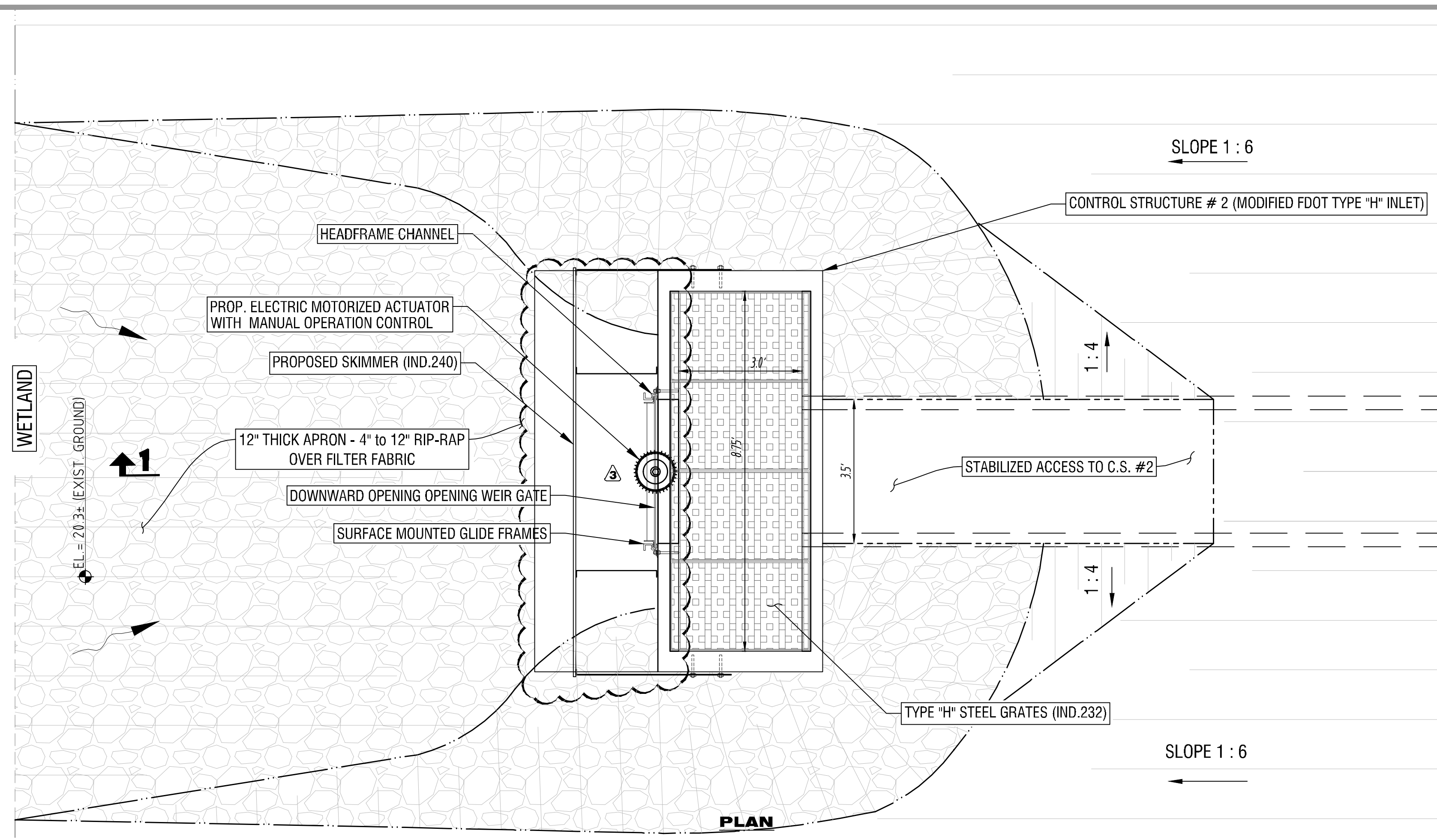
DS #1
CONTROL STRUCTURE

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2013046	12

December 07, 2018

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NOTE:
FOR CS #1 FRONT VIEW REFER TO SHEET 14

NUMBER	REVISIONS	DATE
1	REVISED WEIR GATE LOCATION	08/14/2018
2	REVISION PER LEE COUNTY REVIEW	02/03/2017
3	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	REB	DATE	MAY/16
DRAWN BY	VZ	DATE	05/10/16
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	1"=2'



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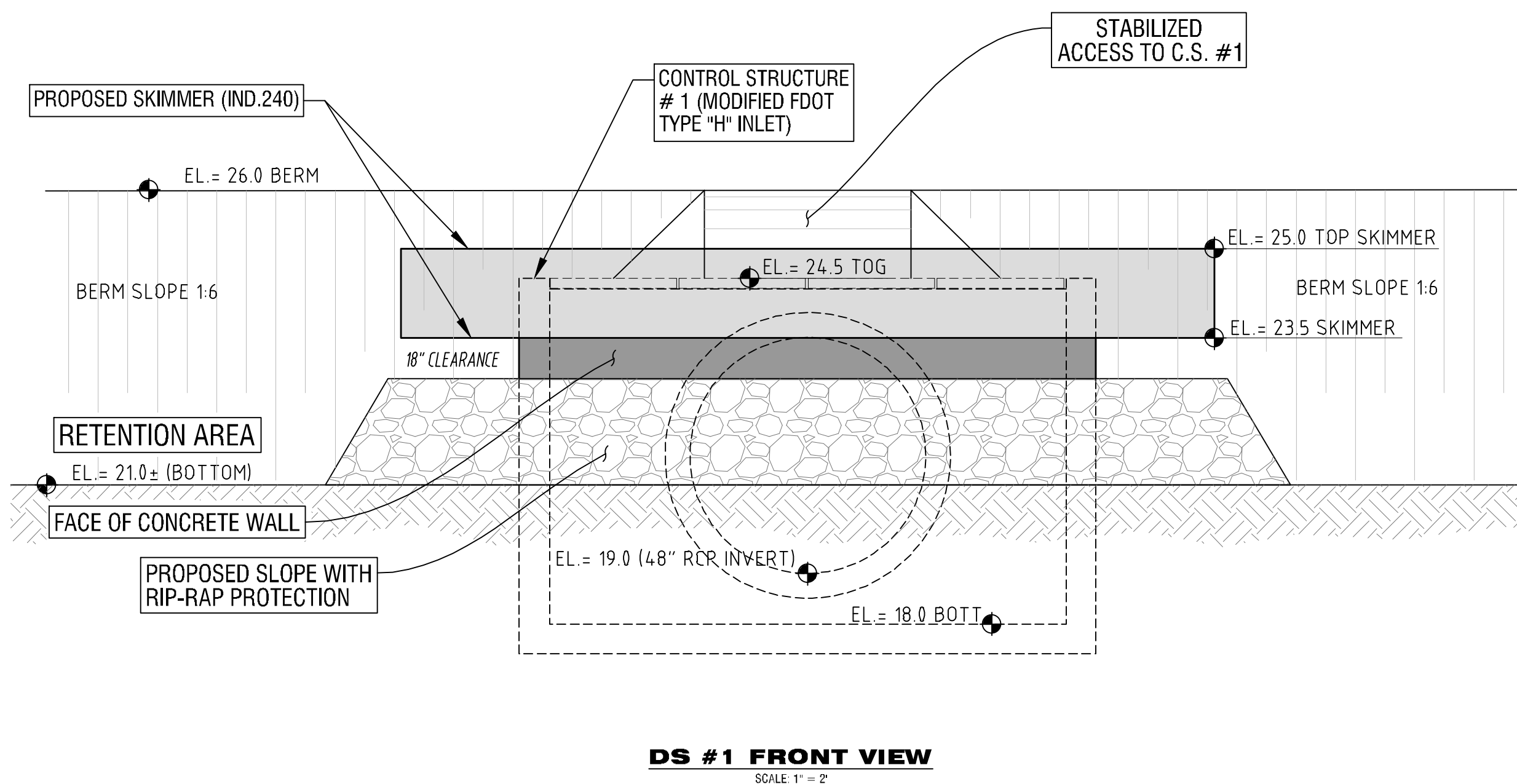
DS #2
CONTROL STRUCTURE - MOD. TYPE "H" INLET (IND.232)

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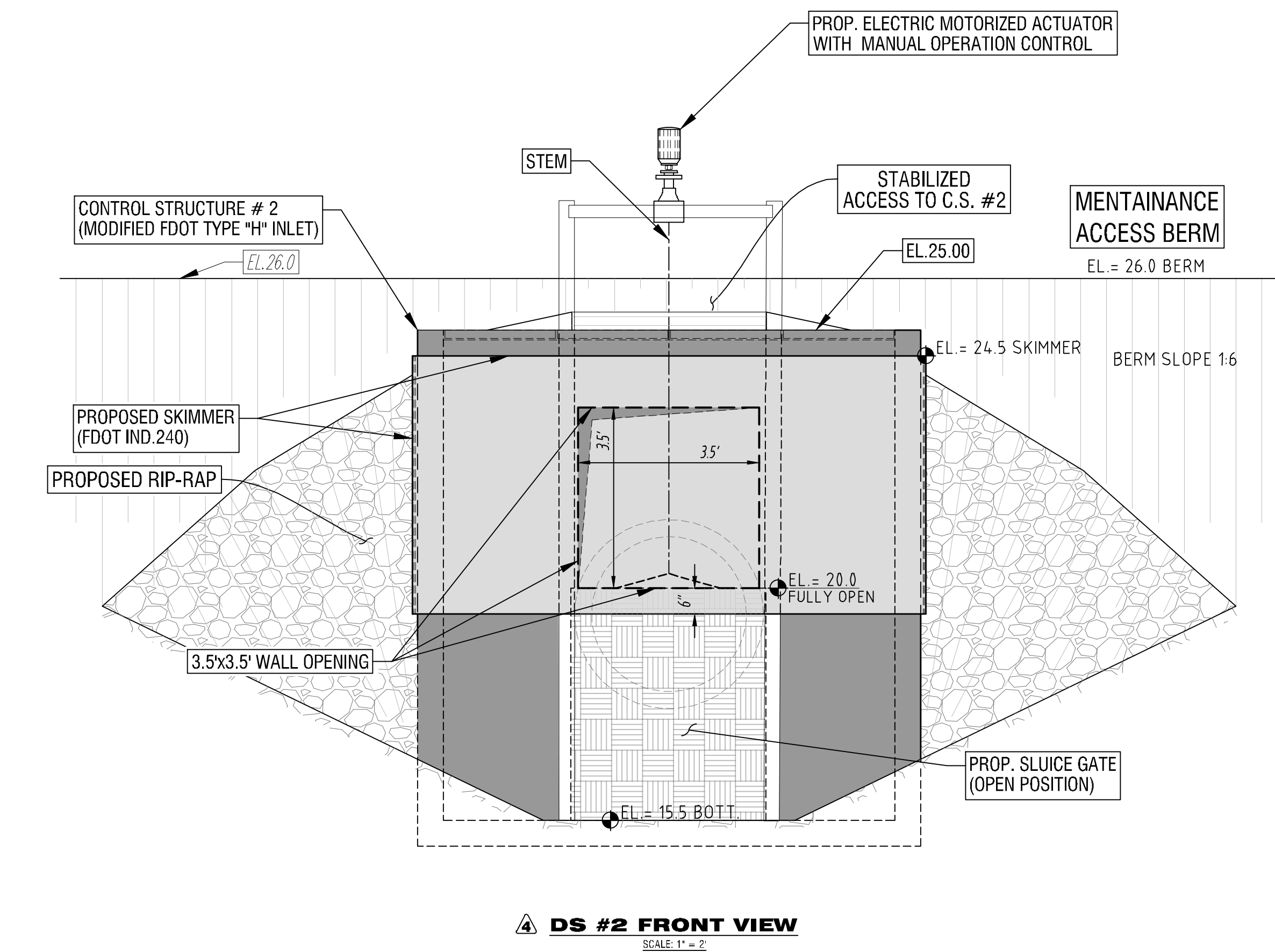
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PROJECT NO.:	SHEET NO.:
2013046	13

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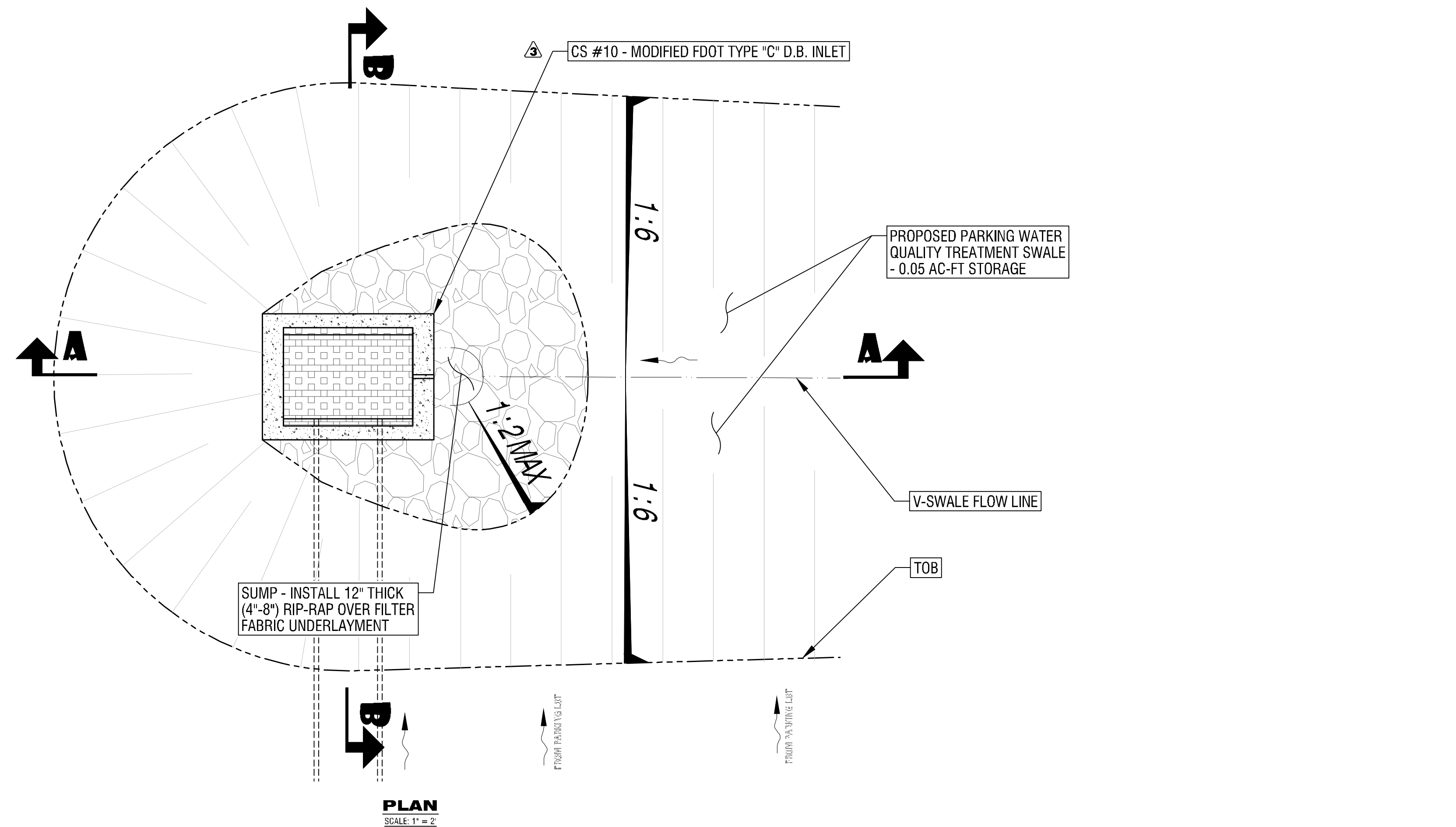
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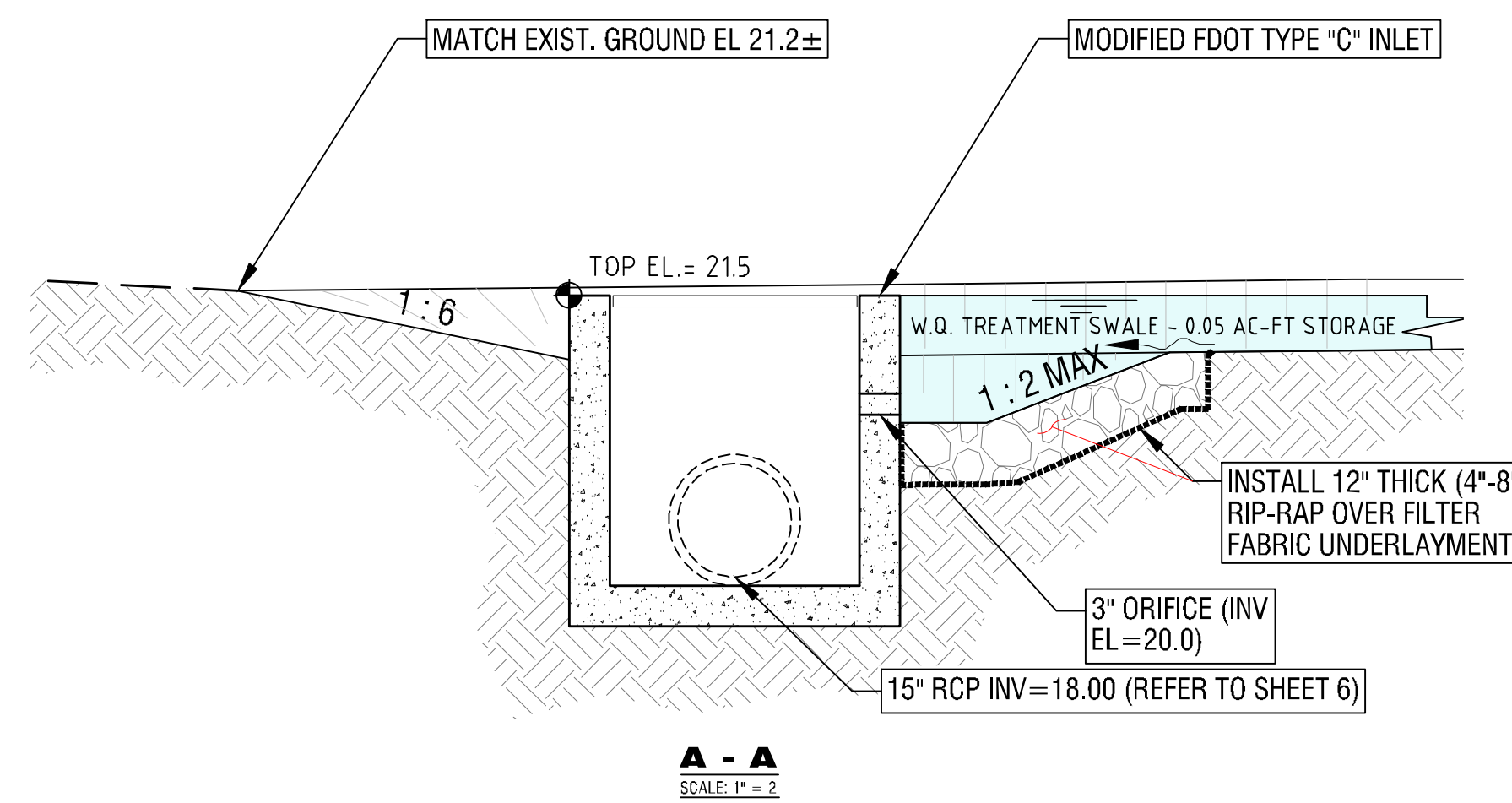
DS #1 FRONT VIEW
SCALE: 1" = 2'



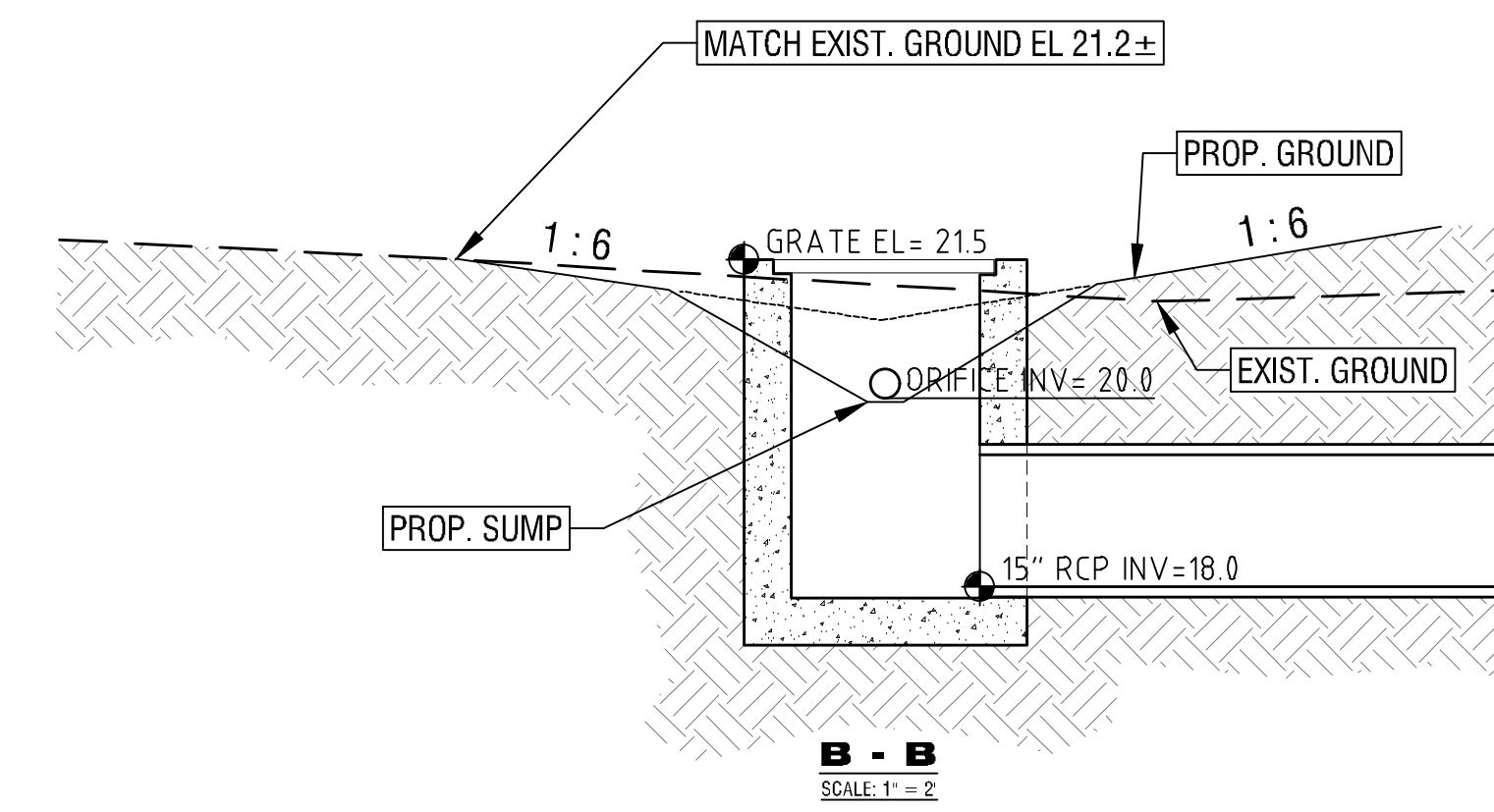
DS #2 FRONT VIEW
SCALE: 1" = 2'



PLAN
SCALE: 1" = 2'



A - A
SCALE: 1" = 2'



B - B
SCALE: 1" = 2'

DS #10
SCALE: 1" = 2'

NUMBER	REVISIONS	DATE
1	REVISED DS #2	08/14/2018
2	REVISION PER SFWMD REVIEW	06/01/2017
3	REVISION PER LEE COUNTY REVIEW	02/03/2017
4	REVISION PER SFWMD REVIEW - ADDED THIS SHEET	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	REB	DATE	MAY/16
DRAWN BY	VZ	DATE	05/10/16
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	1" = 2'



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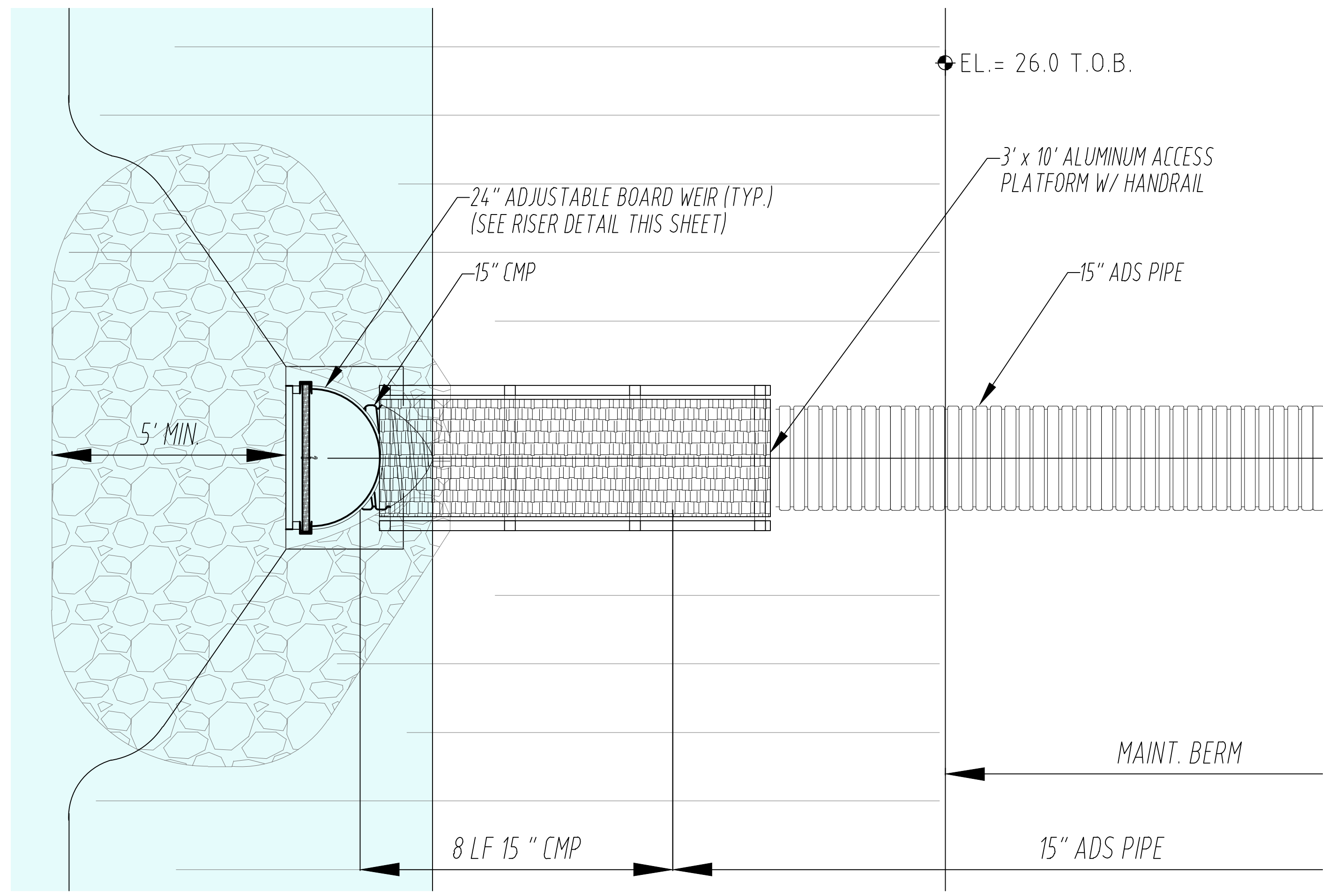
DS #1 AND DS #2 FRONT VIEW
DS #10

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FLORIDA PROFESSIONAL ENGINEER
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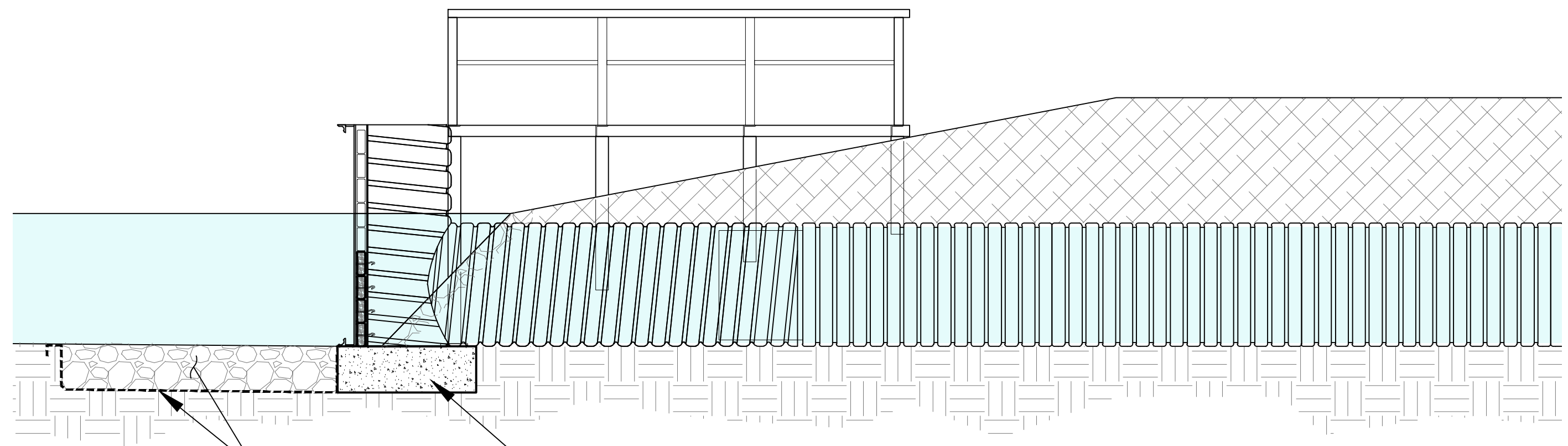
CAD FILE NAME:	DRAWING NO.:
13046.DDET	
PROJECT NO.:	SHEET NO.:
2013046	14

December 07, 2018

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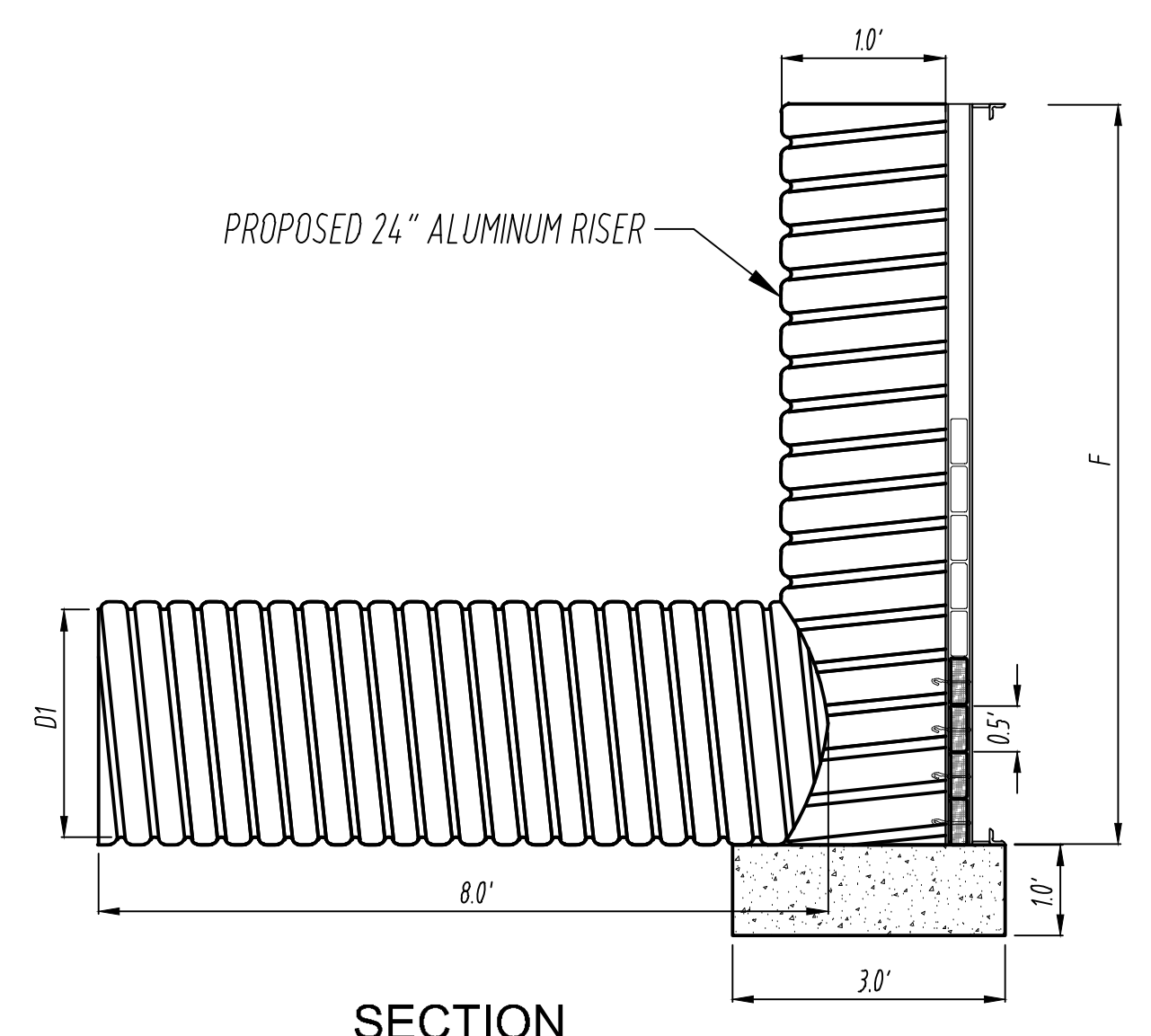
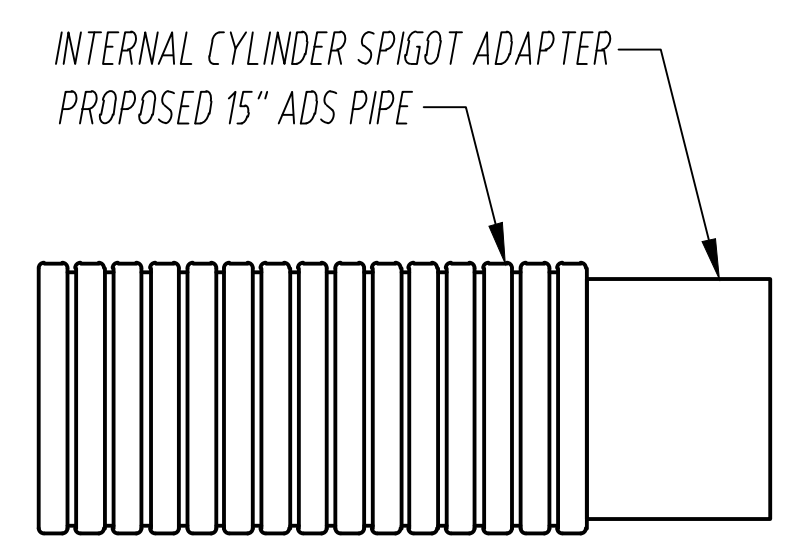


PLAN

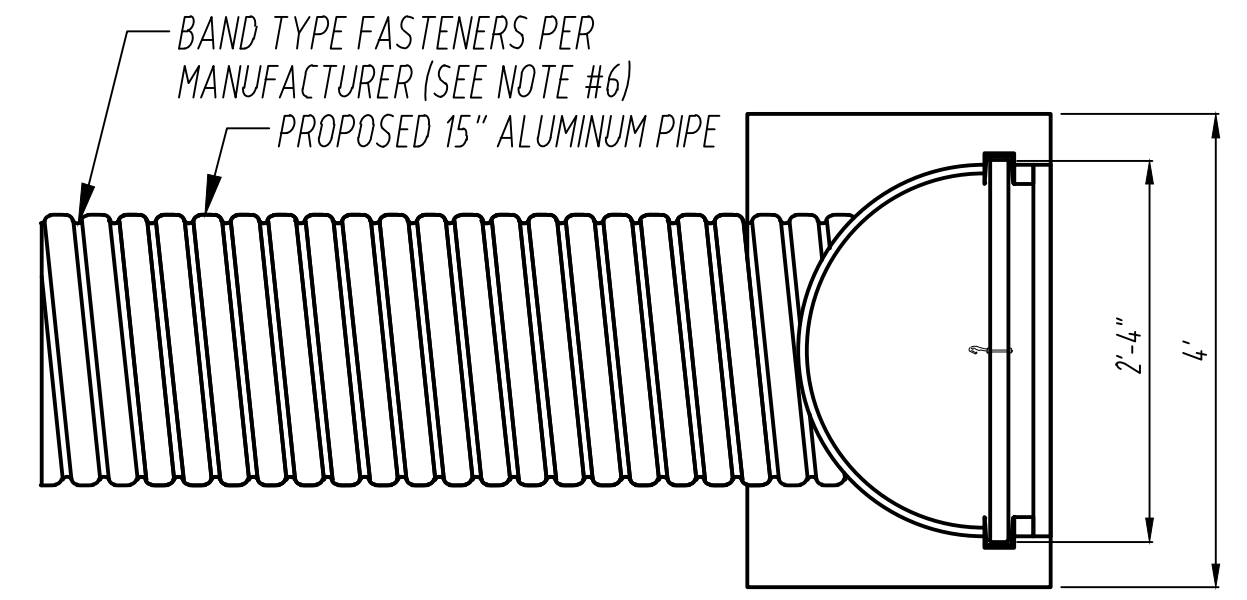


SECTION

DS #4

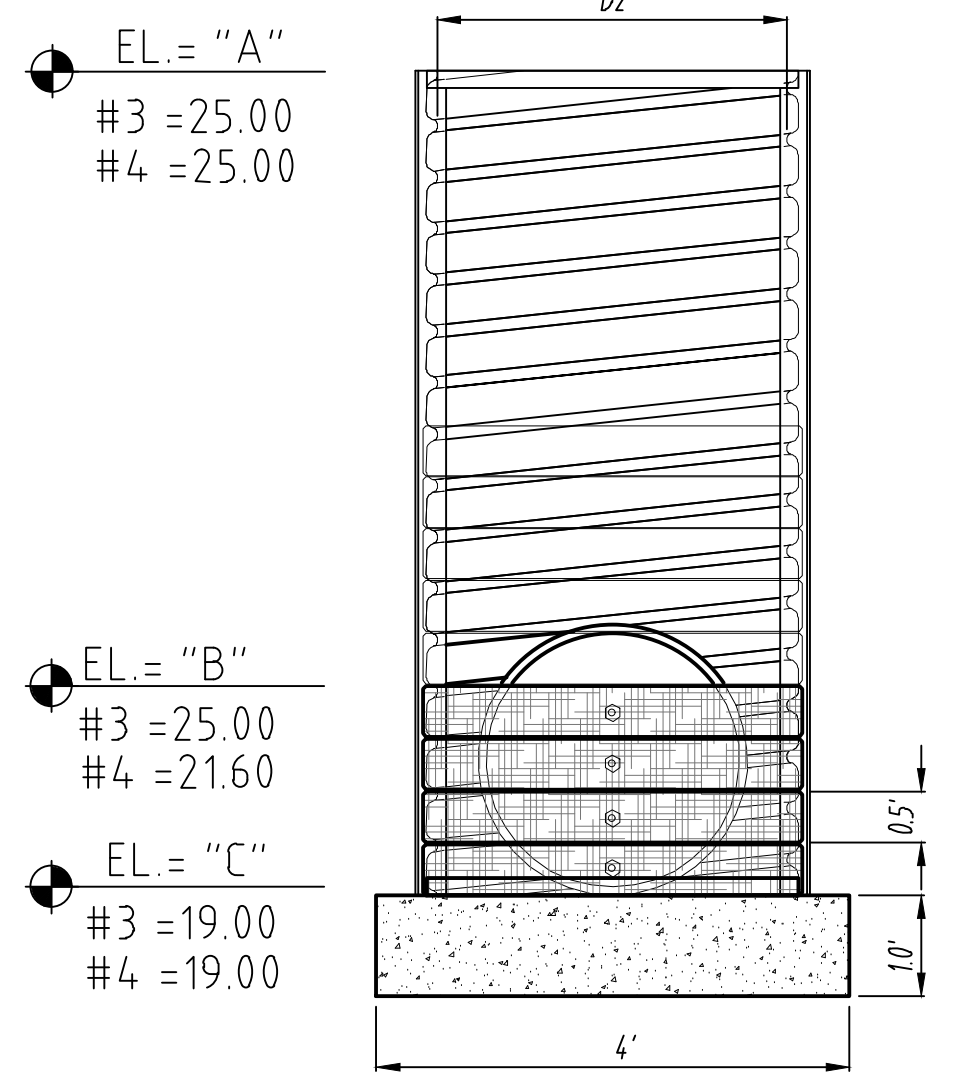


SECTION



PLAN

DS #4 DETAIL



FRONT VIEW

- NOTES:**
- EXISTING GRADE TO BE EXCAVATED IN SUCH A MANNER TO PROVIDE SAFE WORK AREA.
 - INTERNAL CYLINDER ADAPTER TO BE WELDED TO ADS N-12, OUTSIDE DIAMETER TO BE INSERTED INTO INSIDE DIAMETER OF PIPE.
 - AREA UNDER CONSTRUCTION MUST BE OVER EXCAVATED TO ALLOW AMPLE WORK AREA TO WRAP NON-WOVEN GEOTEXTILE.
 - NON-WOVEN GEOTEXTILE TO BE WRAPPED AROUND CONNECTION WITH FULL SEAM OVERLAP TO PROVIDE FULL PROTECTION FROM SOIL INTRUSION.
 - CONNECTION AND PIPE TO BE BACKFILLED PER ASTM 02321.
 - IN LIEU OF AN INTERNAL CYLINDER, AN ADS WATERTIGHT REPAIR COUPLER CAN BE USED TO CONNECT ADS N-12 TO CMP.
 - DETAIL IS APPLICABLE FOR JOINING ADS N-12 TO CMP UNDER SHALLOW COVER, LESS THAN 6' DEEP AND NO LIVE LOADING.

NUMBER	REVISIONS	DATE
1	REVISION PER LEE COUNTY REVIEW	02/03/2017
2	REVISION PER SFWM REVIEW	08/12/2018

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	REB	DATE	MAY/16
DRAWN BY	VZ	DATE	05/10/16
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	N/A

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HOLE MONTES
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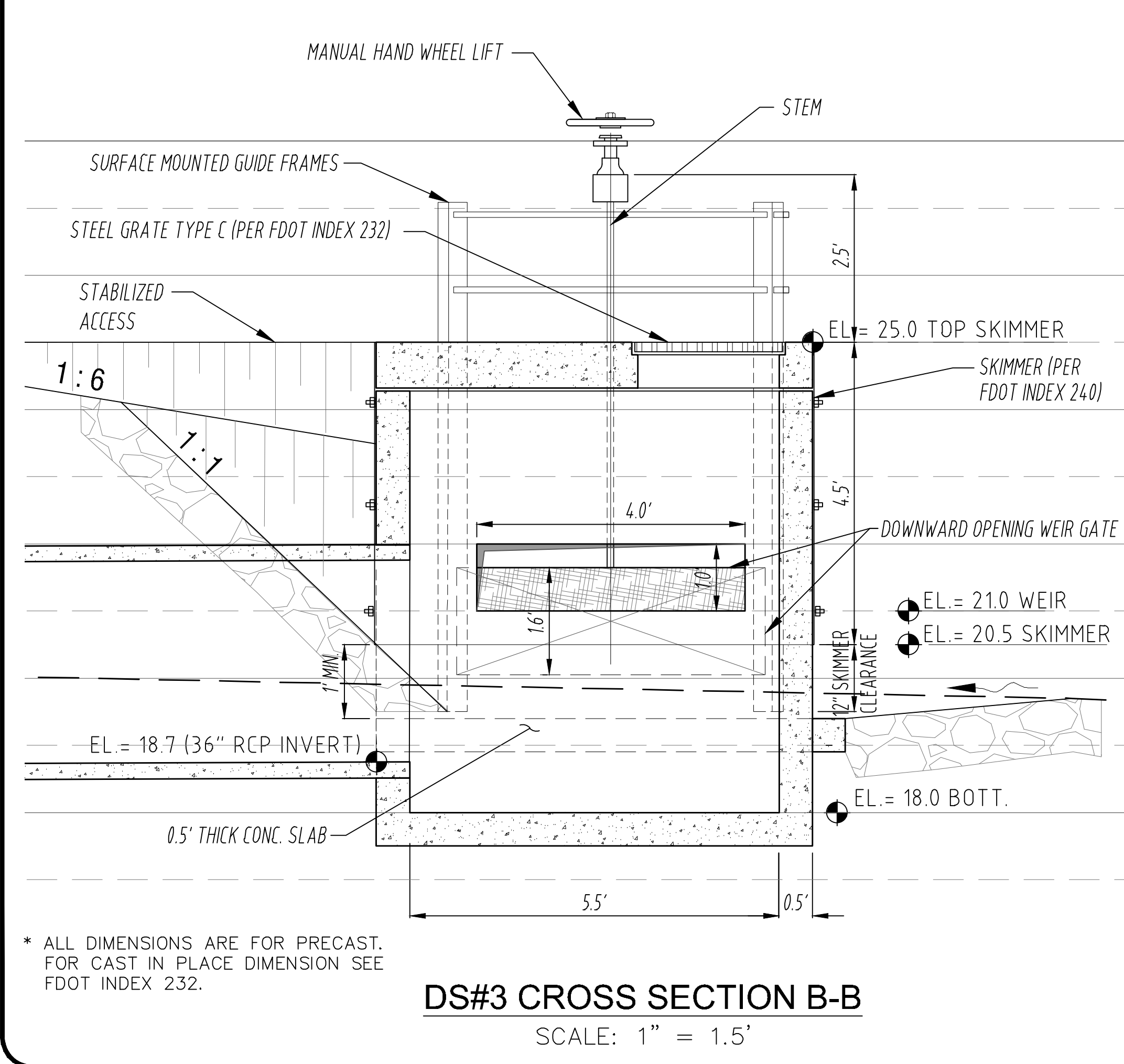
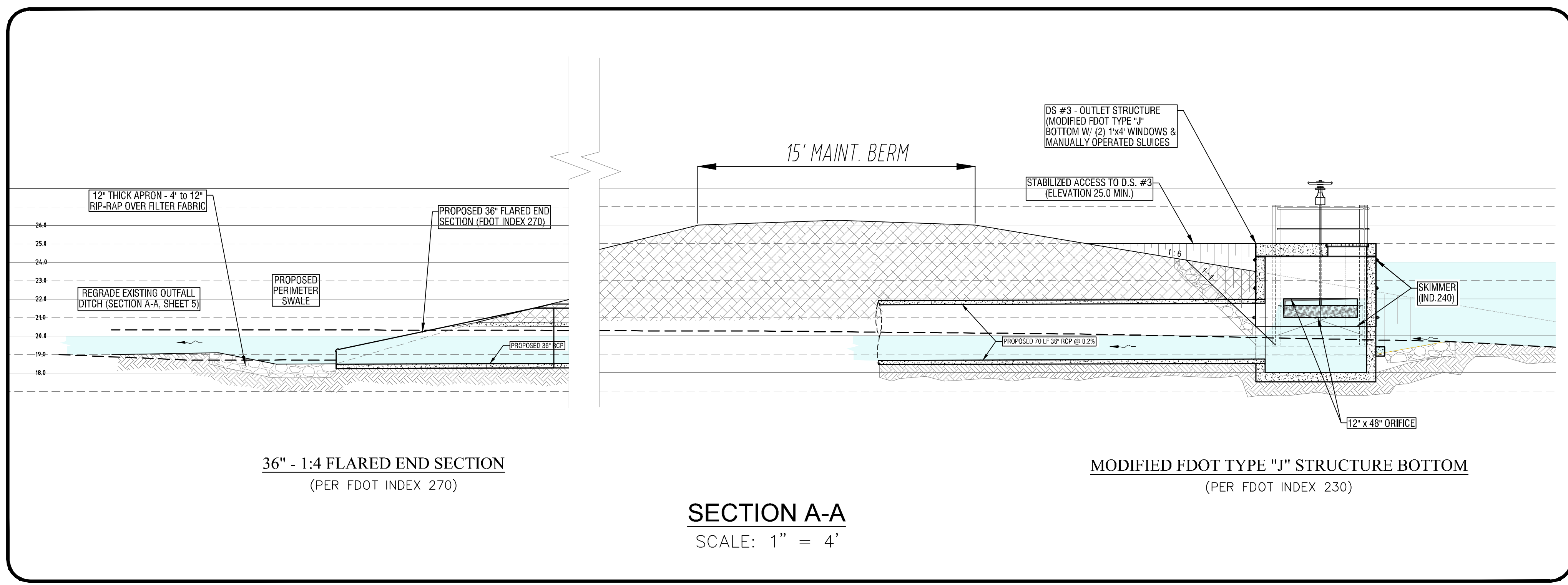
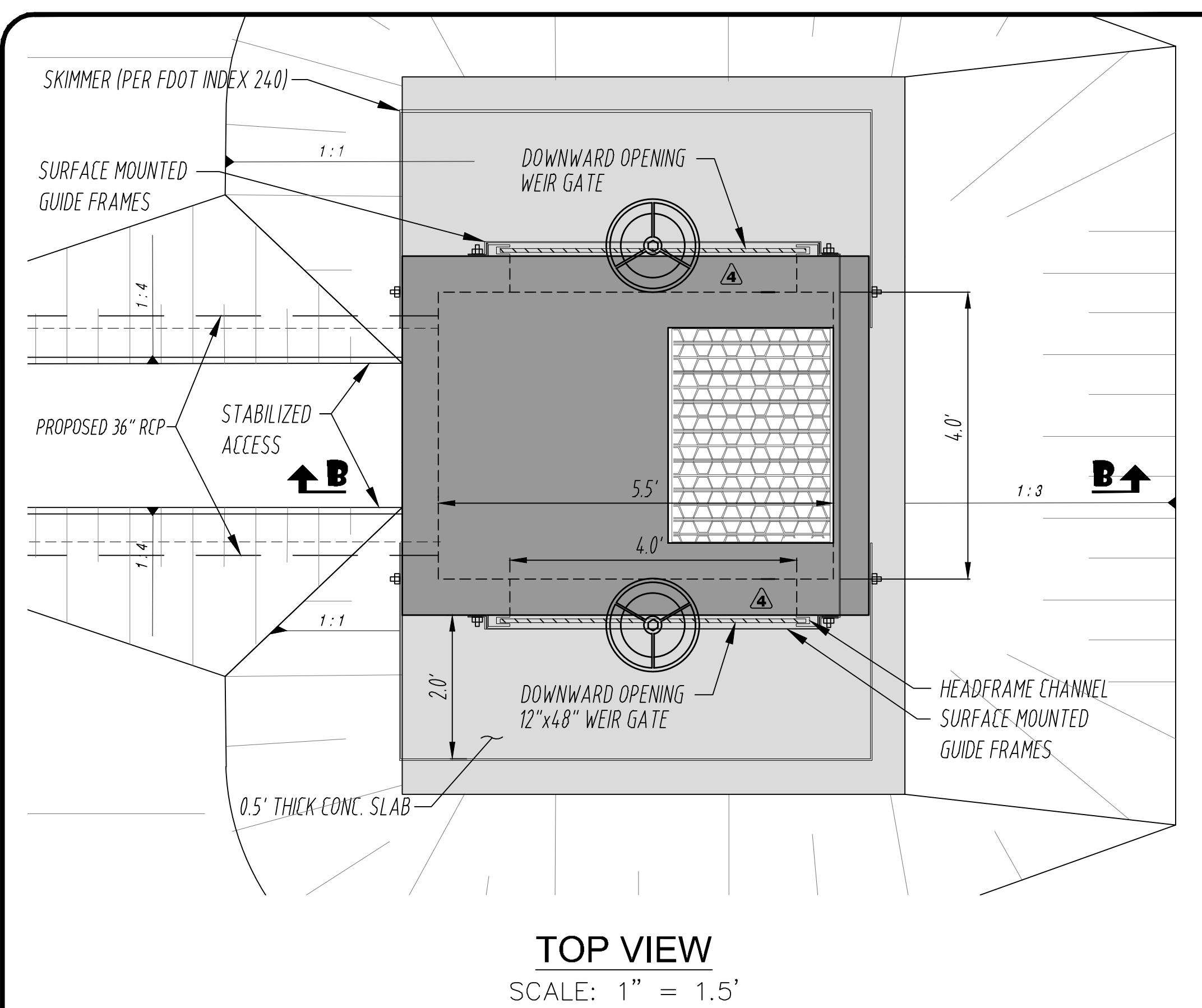
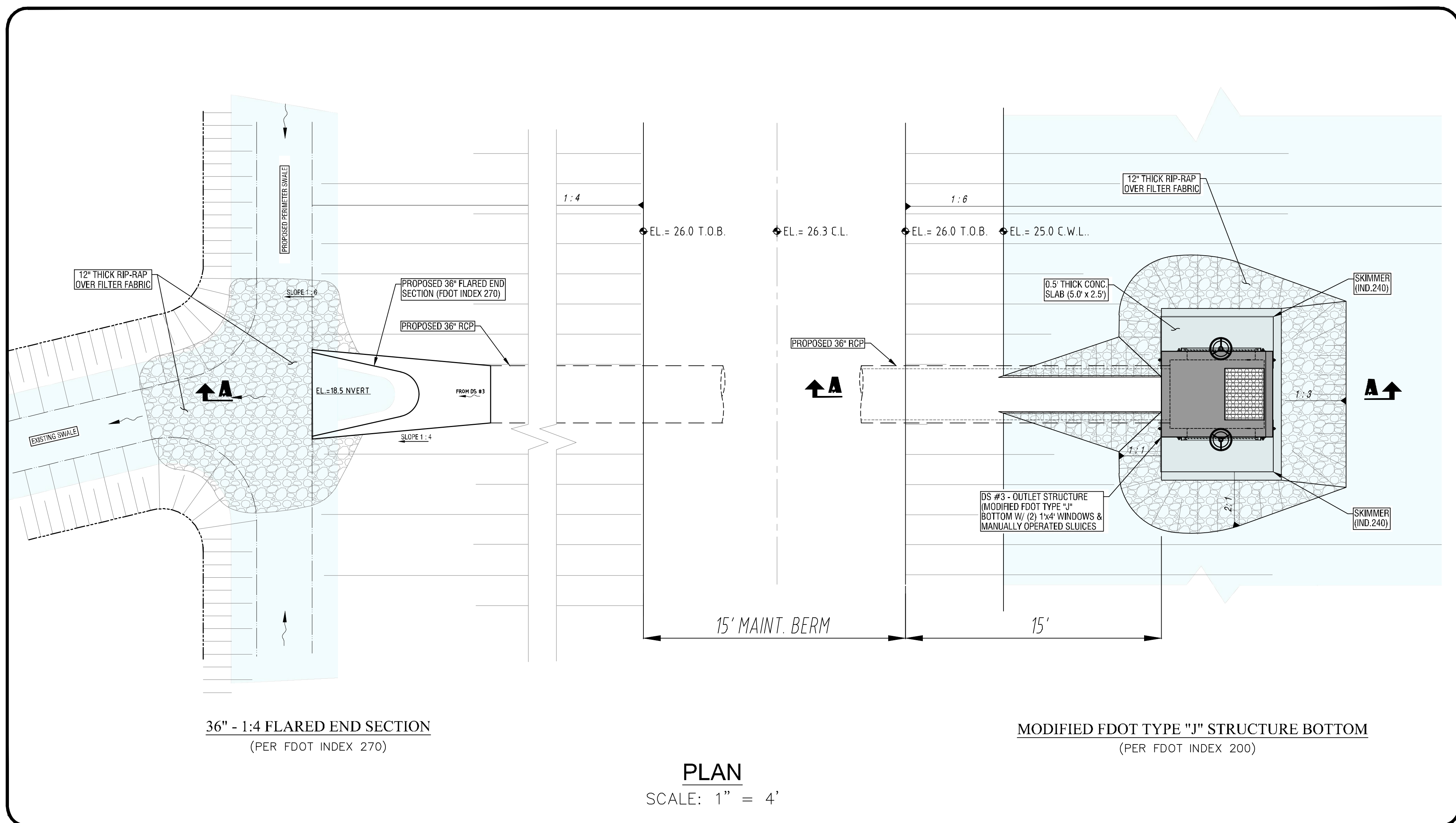
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DS #4
TYPICAL DETAIL

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DATE:

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PROJECT NO.:	2013046	SHEET NO.:	15

December 07, 2018



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NUMBER	REVISIONS	DATE
1	REVISION PER LEE COUNTY REVIEW - REVISED TO DOUBLE WEIR GATE	08/13/2018
2	REVISION PER LEE COUNTY REVIEW - ADDED THIS SHEET	02/06/2018
3	REVISION PER LEE COUNTY REVIEW	02/03/2017
4	REVISION PER SFWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	REB	DATE	MAY/16
DRAWN BY	VZ	DATE	05/10/16
CHECKED BY	REB	DATE	DECEMBER/18
VERTICAL SCALE	N/A	HORIZONTAL SCALE	N/A

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DS #3
DETAIL AND SECTIONS

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	2013046	15A

December 07, 2018

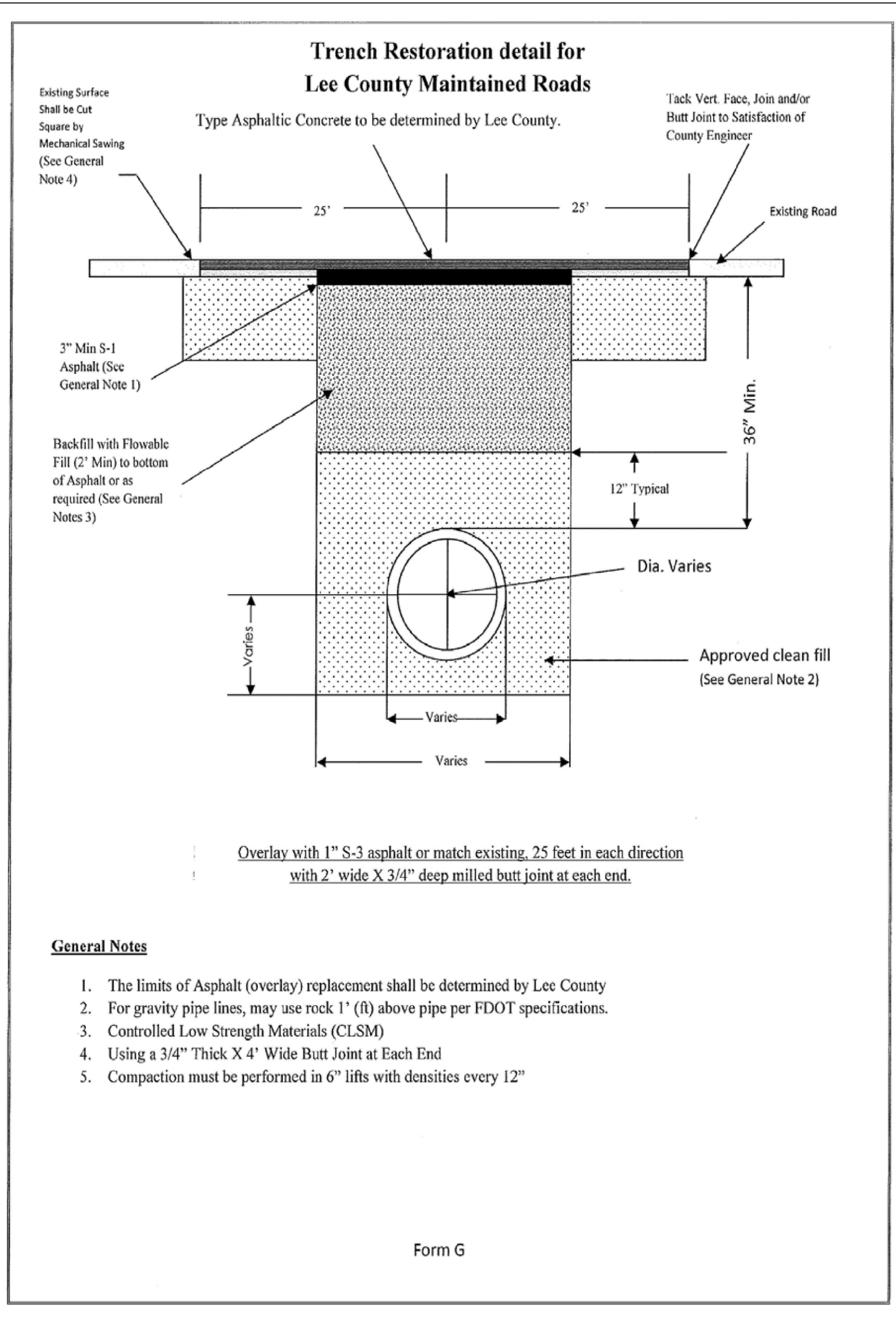
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GENERAL NOTES:

1. Base and backfill material shall be the same type and composition as the materials removed or equal: Material of greater structural adequacy will also be permitted. Existing material removed during construction shall be permitted to be used as backfill provided that it has not been contaminated with deleterious material and provided that it is at least equal to minimum County standards.
2. Base material over excavated portion of ditch shall be at least twice the thickness as the original base material.
3. Base material shall be placed in layers not greater than 6" and each layer shall be tamped or rolled to obtain the minimum specified density.
4. Pavement joints shall be mechanically sawed and tacked prior to patching. Surface treatment joints shall be lapped and feathered.
5. Replacement pavement surface course shall be consistent with adjacent existing surface unless specified otherwise in the permit.
6. Top of underground cable or pipe shall be a minimum of 30" below the existing pavement, or the existing ground elevation where crossing ditches or swales unless otherwise approved by the County Engineer.
7. "As-built" drawings will not be required as long as the work as done is shown correctly on the permit issued for the work.
8. The County must be notified at least 24 hours prior to beginning work and within 24 hours after work is completed. This notification requirement is in addition to any calls for required inspections.

DENSITY REQUIREMENTS:

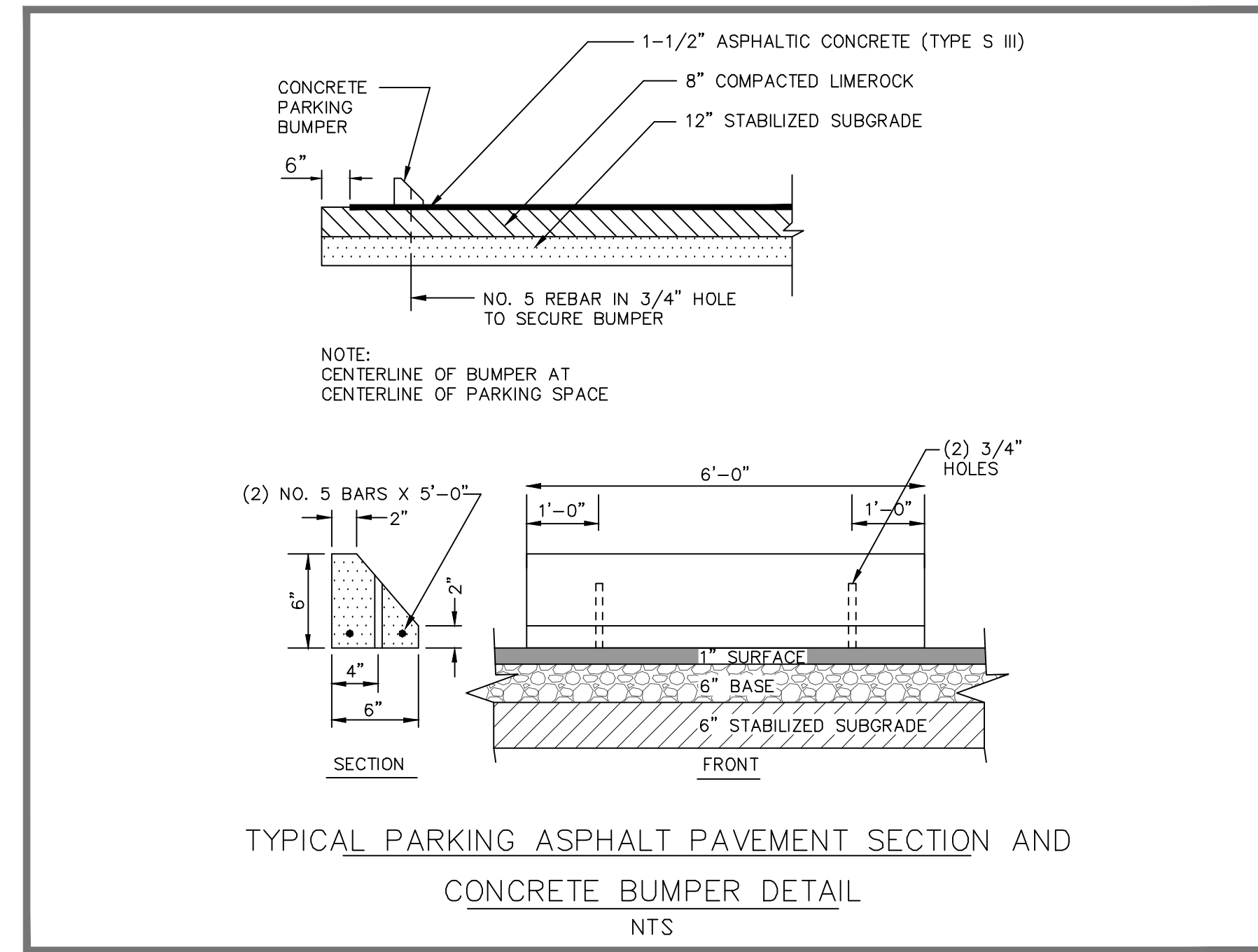
1. Backfill for Stages 1 and 2 and Base material shall be placed in layers not to exceed 6" (compacted thickness). Compaction shall be 100% of AASHTO T-00 (Standard Proctor) or 98% of AASHTO T-180 (Modified Proctor).
2. **Stage 1:** Provide compacted fill beneath and around the pipe or duct to the spring line elevation (midpoint of pipe or duct) using an appropriate tamping method suitable to the work and accepted by the County Engineer. If required by soil conditions, the Stage 1 bedding shall be placed on a layer of stone or gravel at least 5" thick.
3. **Stage 2:** Backfill shall continue in lifts to the top of the subgrade. Each lift shall be mechanically tamped to insure adequate compaction. The County Engineer may require density tests to confirm the achievement of minimum compaction requirements. Such testing, if necessary, shall be at the sole expense of the Permittee.
4. **Base Material:** Place base material and compact mechanically to achieve 98% of maximum density by AASHTO T-180 (Modified Proctor) under the existing or proposed roadway.



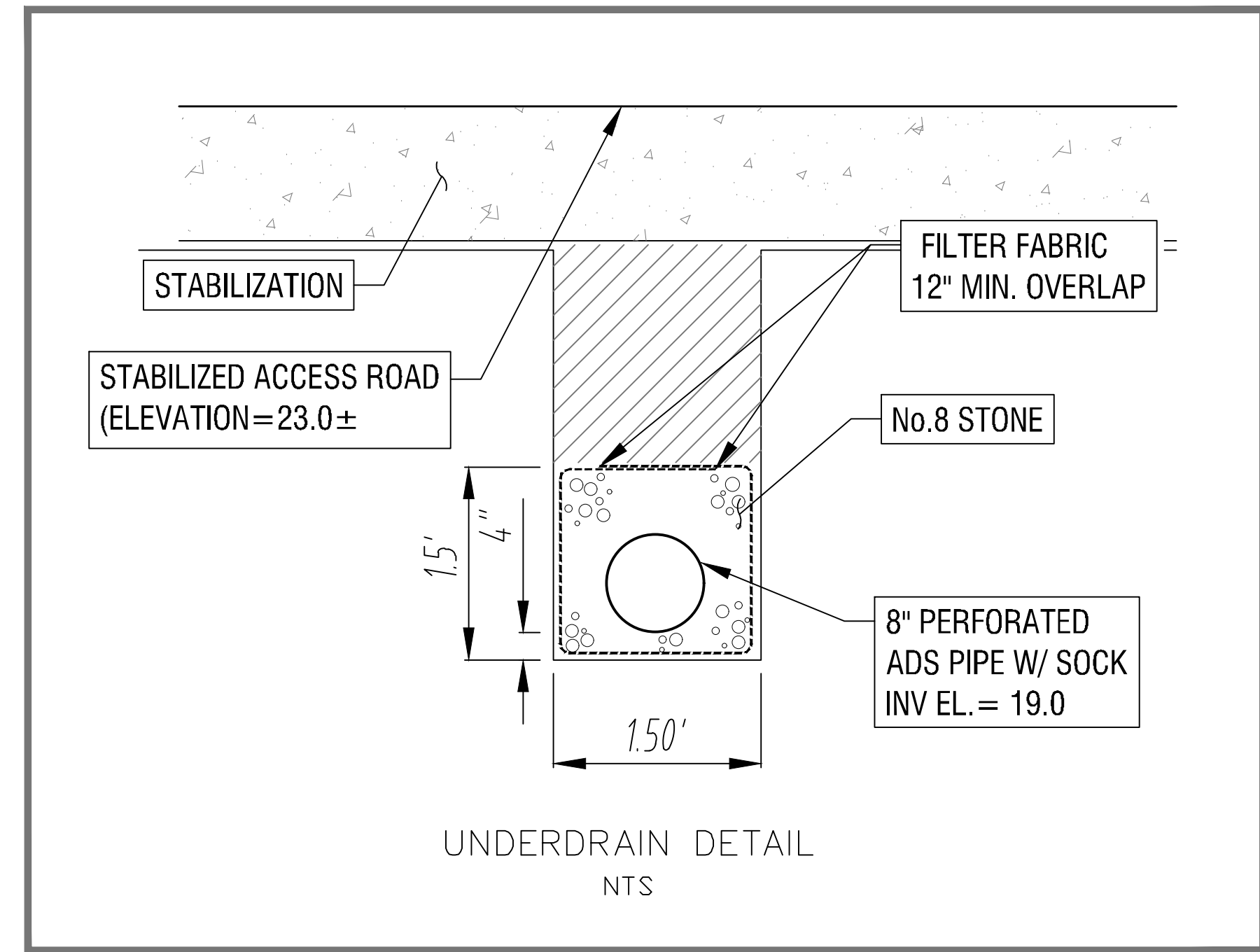
General Notes

1. The limits of Asphalt (overlay) replacement shall be determined by Lee County
2. For gravity pipe lines, may use rock 1' (ft) above pipe per FDOT specifications.
3. Controlled Low Strength Materials (CLSM)
4. Using a 3/4" Thick X 4' Wide Butt Joint at Each End
5. Compaction must be performed in 6" lifts with densities every 12"

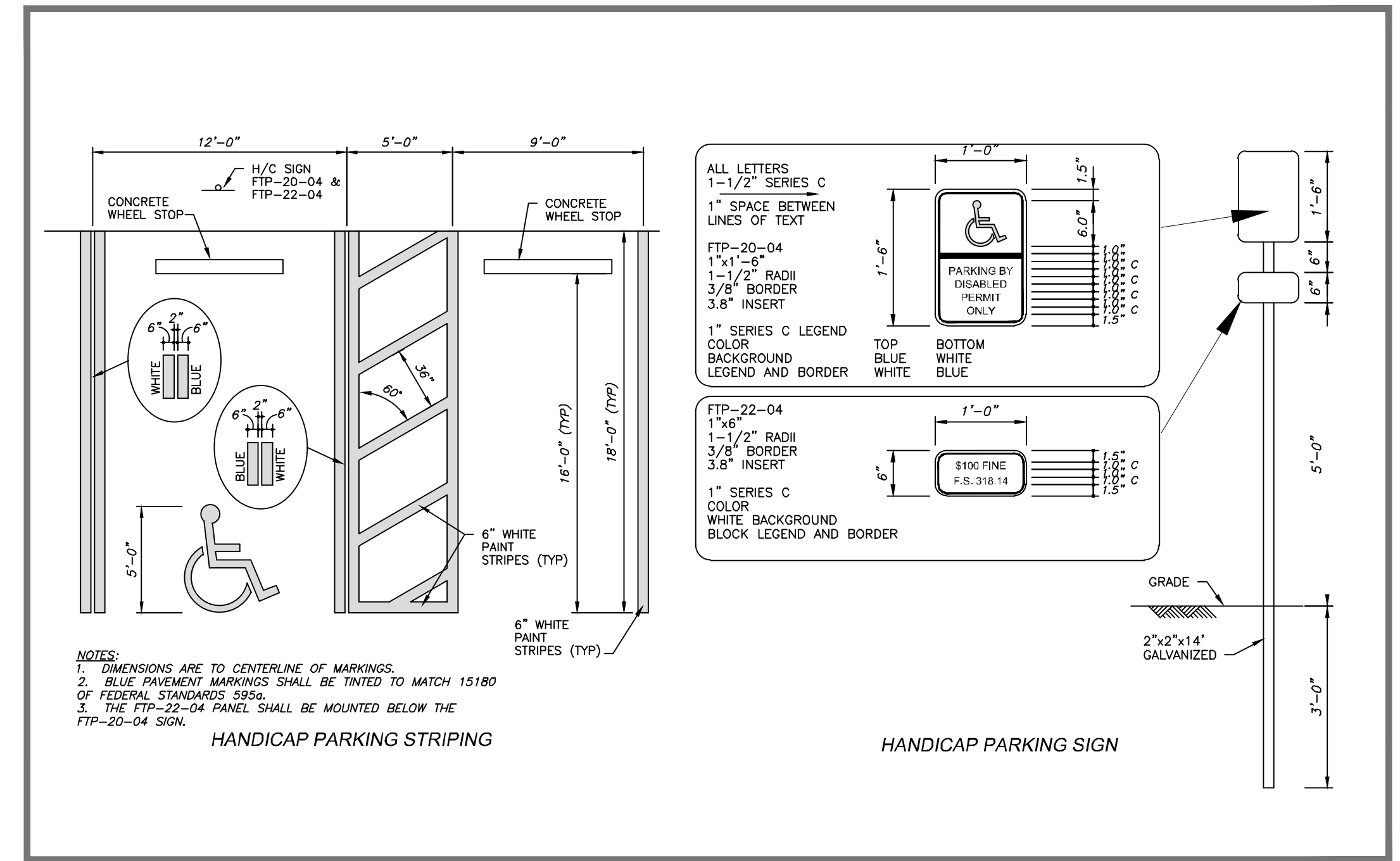
Form G



TYPICAL PARKING ASPHALT PAVEMENT SECTION AND CONCRETE BUMPER DETAIL NTS



UNDERDRAIN DETAIL NTS



HANDICAP PARKING SIGN

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE 05/14/15
CHECKED BY	DATE DECEMBER/18
VERTICAL SCALE	HORIZONTAL SCALE 1"=20'



6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No.1772

PAVING & SITE DETAILS

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW:
RICHARD E. BYLANSKI, P.E.
FLORIDA PROFESSIONAL ENGINEER
REGISTRATION #42339

CAD FILE NAME:	DRAWING NO.:
13046.SDET	
PROJECT NO.:	SHEET NO.:
2013046	16

TYPE C
Recommended Maximum Pipe Size:
2'-0" Wall - 18" Pipe
3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

TYPE D
Recommended Maximum Pipe Size:
3'-1" Wall - 24" Pipe
4'-1" Wall - 36" Pipe

TYPE E
Recommended Maximum Pipe Size:
3'-0" Wall - 24" Pipe
4'-6" Wall - 36" Pipe

TYPE H (2 & 3-GRATE INLET)
Recommended Maximum Pipe Size:
3'-0" Wall - 24" Pipe
6'-7" Wall - 1-60" Pipe
Or 2-24" Pipe (S=3-5)

TYPE H (4-GRATE INLET)
Recommended Maximum Pipe Size:
8'-9" Wall - 1-78" Pipe
Or 2-30" Pipe (S=4-3)

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-15"	A12	0.20	12"	8"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-6"	A12	0.20	12"	8"
6'-10"	A6	0.20	6"	5"
10'-13"	A4	0.20	4"	3"
10'-15"	B5.5	0.24	5 1/2"	5"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	A12	0.20	12"	8"
0'-7.5"	A6	0.20	6"	5"
7.5'-10"	B5.5	0.24	5 1/2"	5"
10'-15"	C6.5	0.37	6 1/2"	6"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	B5.5	0.24	5 1/2"	5"
5'-7"	C6.5	0.37	6 1/2"	6"
7'-15"	D4.5	0.53	4 1/2"	4"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	C3.5	0.37	3 1/2"	3"
5'-10"	D4.5	0.53	4 1/2"	4"

LAST REVISION	DESCRIPTION:	2016 DESIGN STANDARDS	INDEX NO.	SHEET NO.
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TYPE C
Recommended Maximum Pipe Size:
2'-0" Wall - 18" Pipe
3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

TYPE D
Recommended Maximum Pipe Size:
3'-1" Wall - 24" Pipe
4'-1" Wall - 36" Pipe

TYPE E
Recommended Maximum Pipe Size:
3'-0" Wall - 24" Pipe
4'-6" Wall - 36" Pipe

TYPE H (2 & 3-GRATE INLET)
Recommended Maximum Pipe Size:
3'-0" Wall - 24" Pipe
6'-7" Wall - 1-60" Pipe
Or 2-24" Pipe (S=3-5)

TYPE H (4-GRATE INLET)
Recommended Maximum Pipe Size:
8'-9" Wall - 1-78" Pipe
Or 2-30" Pipe (S=4-3)

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-15"	A12	0.20	12"	8"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-6"	A12	0.20	12"	8"
6'-10"	A6	0.20	6"	5"
10'-13"	A4	0.20	4"	3"
10'-15"	B5.5	0.24	5 1/2"	5"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	A12	0.20	12"	8"
0'-7.5"	A6	0.20	6"	5"
7.5'-10"	B5.5	0.24	5 1/2"	5"
10'-15"	C6.5	0.37	6 1/2"	6"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	B5.5	0.24	5 1/2"	5"
5'-7"	C6.5	0.37	6 1/2"	6"
7'-15"	D4.5	0.53	4 1/2"	4"

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0'-5"	C3.5	0.37	3 1/2"	3"
5'-10"	D4.5	0.53	4 1/2"	4"

LAST REVISION	DESCRIPTION:	2016 DESIGN STANDARDS	INDEX NO.	SHEET NO.
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GENERAL NOTES

- This skimmer is intended for use on Type C, D, or E Ditch Bottom Inlets that are used as outlet control structures of stormwater management facilities.
- The side panels are dimensionally symmetric, therefore they may be used on either side of the structure.
- Two (2) skimmers may be constructed on one structure provided they are on opposite ends.
- The width of the front panel (dimension W) shall be the same as the outside dimension across the front of the structure.
- The front panel, side panels, and flat bars are to be hot dip galvanized after fabrication.
- The location of the reinforcing steel in these structures must conform to the applicable standards to avoid conflict with the expansion anchors used to attach the skimmer.
- Grates to be used on the inlets unless otherwise specified in the plans.
- A skimmer consists of two (2) side panels, one front panel, two (2) flat bars, and accessory hardware. The cost of skimmers is to be included in the cost of the inlet.

DESIGN NOTES

- The designer must specify, in the plans, the skimmer height (dimension H) and the sides where the weir slots and skimmers are located. The skimmer height must be one of the dimensions shown in the table on Sheet 2. The skimmer should not be used on structure sides with outside dimensions greater than 6'-4".
- To minimize hydraulic losses across the skimmer, the flow area under the skimmer should be three times larger than the flow area of the weir slot. The distance between the pond bottom at the structure and the skimmer shall be not less than 1 foot.
- The configuration of skimmers may be subject to regulatory requirements. The designer should coordinate the outlet control structure details with the permitting agencies.
- When this skimmer is used, the designer should reference this index with the outlet control structure details. Where a different skimmer design is needed, the designer should provide skimmer details in the plans.
- The designer shall evaluate if a grate is needed for safety reasons. Where a grate is not needed for safety reasons and is not desirable for hydraulic or other reasons, the designer may omit the grate by stating so in the outlet control structure details.
- The designer must show the configuration of the weir slots in the outlet control structure detail.

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DIMENSIONS AND QUANTITIES

D	X	A	B	C	E	F	G	H	M				N				5 1/2" CONCRETE SLAB (CY)				SODDING (SY)			
									Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
15"	2'-3"	1.92	2.18	4.10	2.06	5	1.22	2.9	4.63	7.21	9.79	12.37	1.19	0.38	0.58	0.77	0.96	21	25	27	30			
18"	2'-10"	1.97	2.74	4.71	2.56	6	1.41	3.4	4.92	7.75	10.58	13.42	1.21	0.44	0.65	0.87	1.09	22	25	28	31			
24"	3'-5"	2.08	3.85	5.91	3.56	7	1.73	4.4	5.50	8.92	12.33	15.75	1.25	0.54	0.83	1.12	1.42	24	28	32	35			
30"	4'-3"	2.15	4.95	7.18	4.58	8	2.00	5.4	6.08	10.33	14.58	18.83	1.29	0.66	1.09	1.50	1.91	26	31	35	40			
36"	5'-1"	2.25	6.08	8.33	5.58	9	2.24	6.4	6.67	11.75	16.83	21.92	1.33	0.81	1.38	1.95	2.51	28	34	39	45			
42"	6'-0"	2.34	7.21	9.55	6.56	10	2.45	7.4	7.25	13.25	19.25	25.25	1.38	0.97	1.70	2.45	3.19	30	37	43	50			
48"	6'-9"	2.45	8.33	10.76	7.56	11	2.65	8.4	7.85	14.58	21.33	28.08	1.42	1.13	2.04	2.93	3.84	32	39	47	54			
54"	7'-8"	2.52	9.44	11.96	8.56	12	2.83	9.4	8.42	16.08	23.75	31.42	1.46	1.31	2.44	3.58	4.72	34	42	51	59			
60"	8'-6"	2.62	10.56	13.18	9.56	14	3.00	10.4	9.00	17.50	26.00	34.50	1.50	1.51	2.89	4.28	5.68	36	45	55	64			
66"	9'-2"	2.71	11.68	14.39	10.58	15	3.18	11.4	9.58	18.75	27.62	37.08	1.54	1.68	3.25	4.84	6.43	38	48	58	68			
72"	10'-0"	2.80	12.80	15.60	11.56	16	3.30	12.4	10.16	20.16	30.16	40.16	1.58	1.89	3.74	5.59	7.45	40	51	62	73			
15"	2'-7"	2.27	4.09	6.36	4.03	8	1.22	4.0	4.92	7.21	9.79	12.37	1.19	0.57	0.87	1.15	1.44	23	26	29	32			
18"	2'-10"	2.36	5.12	7.48	5.03	9	1.41	4.9	4.92	7.25	10.58	13.42	1.21	0.66	0.99	1.31	1.65	25	28	31	35			
24"	3'-5"	2.53	7.18	9.71	7.03	11	1.73	6.0	5.50	8.92	12.33	15.75	1.25	0.85	1.30	1.75	2.20	28	32	36	40			
30"	4'-3"	2.70	9.25	11.95	8.03	13	2.00	7.0	6.08	10.33	14.58	18.83	1.29	1.10	1.74	2.39	3.05	31	36	41	46			
36"	5'-1"	2.87	11.31	14.18	10.03	15	2.24	8.0	6.67	11.75	16.83	21.92	1.33	1.32	2.21	3.08	3.96	34	40	46	52			
42"	6'-0"	3.05	13.37	16.42	13.03	17	2.45	9.0	7.25	13.25	19.25	25.25	1.38	1.58	2.76	3.91	5.09	38	44	51	58			
48"	6'-9"	3.22	15.43	18.63	15.03	19	2.65	10.0	7.85	14.58	21.33	28.08	1.42	1.85	3.30	4.73	6.17	41	48	56	63			
54"	7'-8"	3.39	17.49	20.88	17.03	21	2.83	11.0	8.42	16.08	23.75	31.42	1.46	2.14	3.95	5.77	7.58	44	52	61	69			
60"	8'-6"	3.56	19.55	23.11	19.03	23	3.00	12.0	9.00	17.50	26.00	34.50	1.50	2.45	4.66	6.87	9.07	47	56	66	75			
66"	9'-2"	3.73	21.62	25.35	21.03	25	3.18	13.0	9.58	18.75	27.62	37.08	1.54	2.88	5.54	8.18	10.84	49	59	69	80			
72"	10'-0"	3.91	23.68	29.39	23.03	27	3.30	14.0	10.16	20.16	30.16	40.16	1.58	3.54	6.61	9.67	13.13	52	63	74	85			

GENERAL NOTES

- See General Note No. 5. See Sheet 5 For 3" Slab Quantities.
- Values shown for estimating pipe quantities and are for information only.
- Dimensions permitted to allow use of 8' standard pipe lengths.
- Dimensions permitted to allow use of 12' standard pipe lengths.
- Concrete slab shall be deepened to form bridge across crown of pipe. See section below.

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Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY: DATE: 05/14/15
DRAWN BY: VZ
CHECKED BY: REB DATE: DECEMBER/18
VERTICAL SCALE: N/A HORIZONTAL SCALE: N/A

H M
HOLE MONTES
ENGINEERS - PLANNERS - SURVEYORS

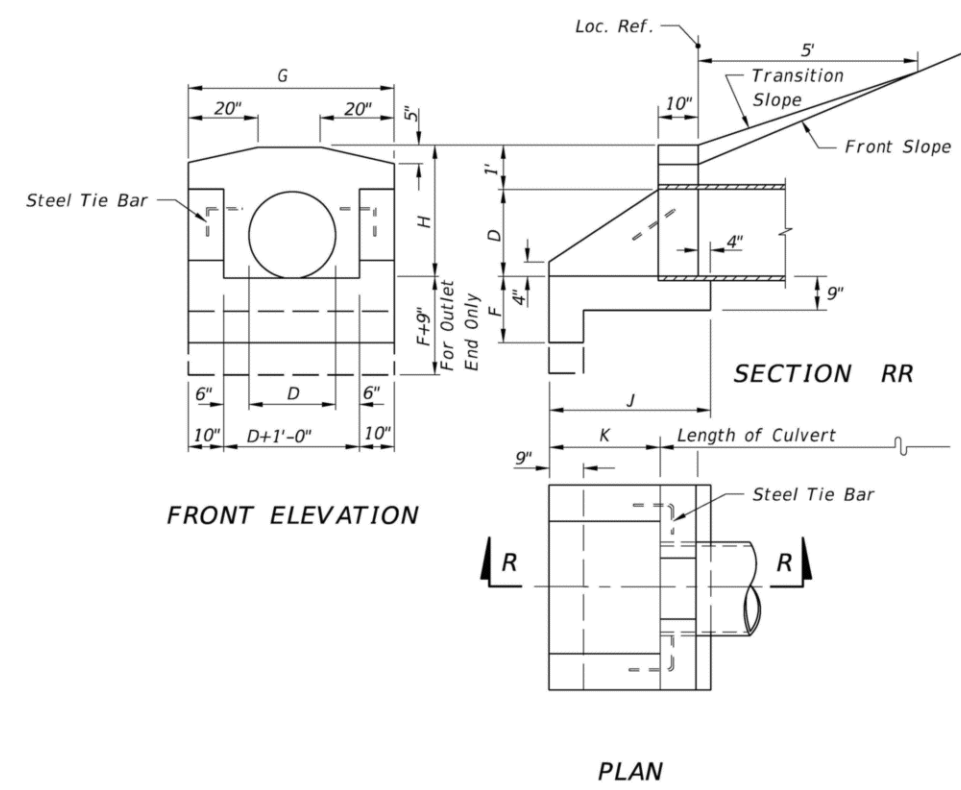
6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No. 1772

FDOT STANDARD DETAILS

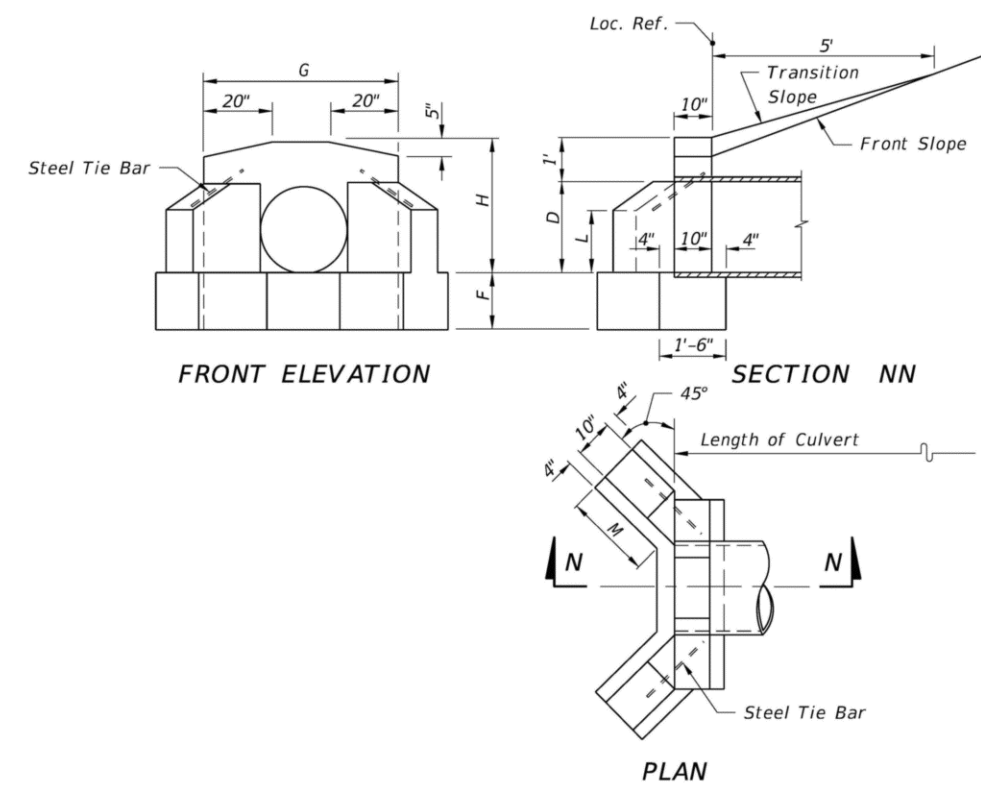
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CAD FILE NAME:	DRAWING NO.:
13046.FDOT	
PROJECT NO.:	SHEET NO.:
2013046	17

December 07, 2018



CONCRETE ENDWALL WITH U-TYPE WINGS FOR PIPE CULVERTS



CONCRETE ENDWALL WITH 45° WINGS FOR PIPE CULVERTS

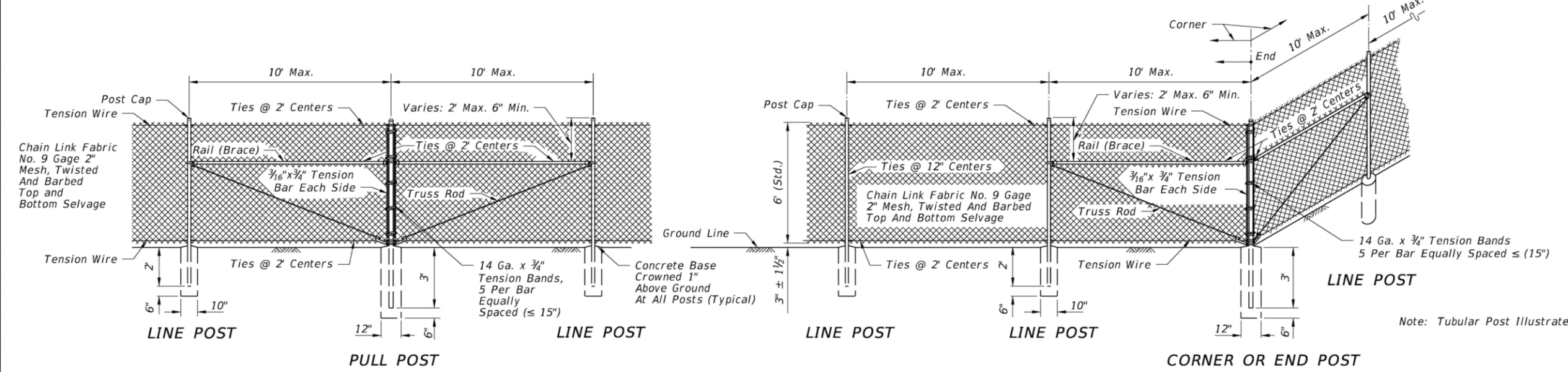
TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES
PIPE CULVERT ENDWALLS WITH U-TYPE WINGS

Opening D Area (ft ²)	DIMENSIONS					QUANTITIES IN ONE ENDWALL						Steel Tie Bars
	W	H	K	F	J	Concrete, Class I, Total (CY)		Concrete, Class I		CIP		
12' 0.8	3'-0"	2'-0"	1'-0"	1'-3"	2'-2"	0.48	0.55	0.49	0.57	0.49	0.57	none
15' 1.2	3'-11"	2'-3"	1'-5"	1'-3"	2'-7"	0.59	0.67	0.62	0.61	0.70	0.62	none
18' 1.8	4'-2"	2'-6"	1'-9"	1'-3"	2'-11"	0.70	0.79	0.74	0.82	0.74	0.82	2-#6 Bars x 2'-0"
24' 3.1	4'-8"	3'-0"	2'-6"	1'-6"	3'-8"	1.01	1.11	1.06	1.16	1.06	1.16	2-#6 Bars x 2'-0"
30' 4.9	5'-2"	3'-6"	3'-0"	1'-9"	4'-4"	1.33	1.44	1.41	1.51	1.49	1.51	2-#6 Bars x 2'-0"
36' 7.1	5'-6"	4'-0"	3'-0"	1'-9"	5'-2"	1.73	1.85	1.84	1.96	1.82	1.94	2-#6 Bars x 2'-0"
42' 9.6	6'-2"	4'-6"	3'-0"	1'-9"	5'-11"	2.19	2.32	2.32	2.45	2.32	2.45	2-#6 Bars x 2'-0"
48' 12.6	6'-8"	5'-0"	3'-0"	1'-9"	6'-8"	2.64	2.78	2.81	2.95	2.78	2.95	2-#6 Bars x 2'-0"

GENERAL NOTES

- Winged concrete endwalls are intended for use outside the clear zone.
- Chamfer all exposed edges 1/4".
- Concrete shall be Class I, except ASTM C478 (4000 psi) Concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.
- Endwall to be paid for under the contract unit price for Class I Concrete.
- Sodding to be in accordance with Index No. 281, and paid for under the contract unit price for Performance Turf, S1.

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GENERAL NOTES

- This fence to be used generally in urban areas.
- For supplemental information refer to Section 550 of FDOT Standard Specifications.
- Chain link fabric, post, truss rods, tension wires, tie wires, stretcher bars, gates and all miscellaneous fittings and hardware shall meet the requirements of AASHTO and ASTM signify current reference.
- Fence Component Options:
 - A. Line post options:
 - Galvanized steel pipe, Schedule 40-1 1/2 nominal dia., zinc galvanized at the rate of 1.8 oz./ft²; ASTM A53 Table 2 (Grade A or B), ASTM F1083, and AASHTO M111.
 - Aluminum coated steel pipe: ASTM A53, Table 2 (Grade A or B), Schedule 40-1 1/2 nominal dia., 1.90" OD, coated at the rate 0.40 oz./ft²; AASHTO M111.
 - Aluminum alloy pipe- 2" nominal dia.: ASTM B241 or B221; Alloy 6063 T6.
 - Steel H-beam- 18x 18x 1 1/2; Zinc Galv. 1.8 oz./ft²; AASHTO M111 and Detail.
 - Aluminum alloy H-beam- 18x 18x 1 1/2; Detail.
 - Steel C- 18x 18x 1 1/2; Galv. 1.8 oz./ft²; zinc; AASHTO M111; OR, 0.9 oz./ft²; zinc-5% aluminum-mischmetal; ASTM F1043 and Detail.
 - Resistance welded steel pipe: 50,000 psi min. yield strength ASTM A569/A569M, A53/A563M or uncoated stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 1 1/2" OD, 1 1/2" NPS, 1.900" dec. equiv., 0.120" min. wall thick, and min. wt. 2.28 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15µg/in² min. and the polymer film topcoat shall have a thickness of 0.0003 min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.
 - Corner, end, and pull post options:
 - Galvanized steel pipe, Schedule 40- 2" nominal dia., zinc galvanized at the rate of 1.8 oz./ft²; ASTM A53 Table 2, ASTM F1083, and AASHTO M111.
 - Aluminum coated steel pipe: ASTM A53 steel, x 2 Tables; Schedule 40; 2" nominal dia., 2.375" OD; coated at the rate 0.40 oz./ft²; AASHTO M111.
 - Aluminum alloy pipe- 2 1/2" nominal dia.: ASTM B241 or B221; Alloy 6063 T6.
 - Resistance welded steel pipe: 50,000 psi min. yield strength ASTM A569/A569M, A53/A563M or uncoated stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 2 1/2" OD, 2" NPS, 2.375" dec. equiv., 0.130" min. wall thick, and min. wt. 3.17 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15µg/in² min. and the polymer film topcoat shall have a thickness of 0.0003 min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.
- Tension wire options:
 - Steel wire No. 7 gage zinc galvanized at the rate of 1.2 oz./ft²; AASHTO M181.
 - Aluminum alloy wire with a diameter of 0.1875" or larger conforming to the requirements of ASTM B211, Alloy 5056 Temper H38, or Alclad Alloy 5056 Temper H192.
 - Aluminum coated steel wire No. 7 gage coated at the rate of 0.40 oz./ft²; AASHTO M181.
- Tie wire and hog ring options:
 - Steel wire No. 9 gage zinc galvanized at the rate of 1.2 oz./ft².
 - Aluminum alloy wire with a diameter of 0.1443" or larger conforming to the requirements of ASTM B211, Alloy 5056 Temper H38, or Alclad Alloy 5056 Temper H192.
 - Aluminum coated steel wire No. 7 gage coated at the rate of 0.40 oz./ft².

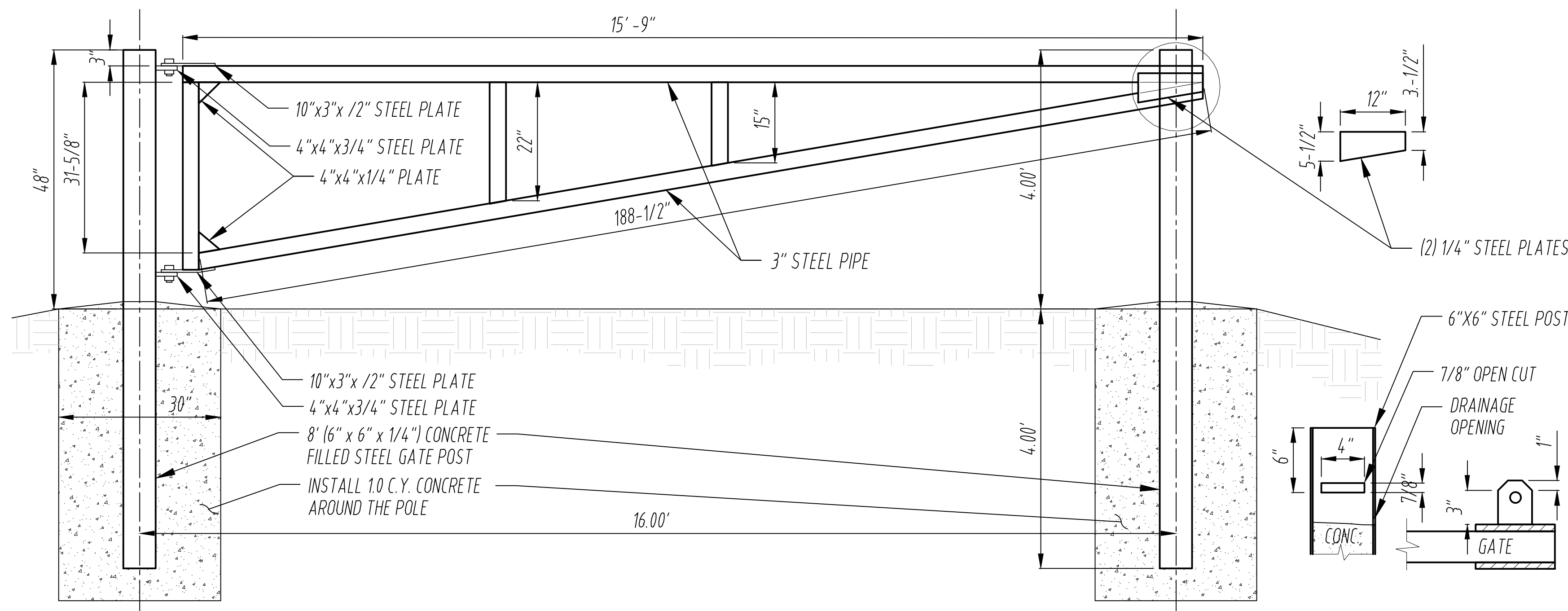
LAST REVISION 07/01/09	DESCRIPTION: REVISION	2016 DESIGN STANDARDS	INDEX NO. 802	SHEET NO. 1 of 3
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- GENERAL NOTES CONTINUED
- Unless a specific material is called for in the plans the Contractor may elect to use either a single type of material or a combination of material types from the component options listed in note 4. Combinations of optional materials are restricted as follows:
 - (a) Only one fabric optional material will be permitted between corner and/or end post assemblies.
 - (b) Only one line post optional material will be permitted between corner and/or end post assemblies.
 - (c) Pull post assemblies shall be optional materials identical to either the linepost optional material or the corner and end post assembly optional material, but, pull post assemblies shall be the same optional material between any set of corner and/or end post assemblies.
 - Concrete for bases shall be Class NS concrete as specified in Section 347 of the Standard Specifications or a package, dry material meeting the requirements of a concrete under ASTM C-387. Materials for Class NS concrete may be proportioned by volume and/or by weight.
 - Line post shall be 8'-6" long (Standard). Line post are to be set in concrete as described above or by the following methods:
 - (a) In accordance with special details and/or as specifically described in the contract plans and specifications.
 - (b) In accordance with ASTM F562 Subsections 5.4 through 5.10 as approved by the Engineer.
 - (c) Line post installed in accordance with Section 5.8 shall be 8'-6" long.
 - (d) Post mounted on concrete structure or solid rock shall be mounted in accordance with the base plate detail "Fence Mounting on Concrete Endwalls And Retaining Wall", Sheet 3, or, by embedment in accordance with ASTM F367 Subsection 5.5.
 - End, pull and corner post assemblies shall be in concrete as detailed above for all soil conditions other than solid rock. Post within assemblies that are located on concrete structures or solid rock shall be set by base plate or by embedment as prescribed under (b) above for line post.
 - Line and assembly posts for 6' fence which must be lengthened due to a variation in the normal ground clearance, shall be set an additional 3" in depth for each 1' of additional ground clearance.
 - Pull post shall be used at breaks in vertical grades of 15% or more, or at approximately 350' centers except that this maximum interval may be reduced by the Engineer on curves where the curve is greater than 3'.
 - Corner post are to be installed at all horizontal breaks in fence at 15' or more and as required at vertical breaks over 15' as determined by the Engineer.
 - When fence has an installed top of fabric height less than 6' knuckled top and bottom selvages shall be used unless the plans specifically identify locations for twisted selvage fabrics.
 - Unless sliding gates or special gates are called for in the plans, all gates shall be chain link swing gates meeting the material requirements described and as approved by the Engineer. Payment shall include the gates, single or double, all necessary hardware for installation and any additional length and/or size for posts at the opening. Gates shall be paid for under the contract unit price for Fence Gates, EA.
 - For construction purposes corner post assemblies shall consist of one corner post, two braces, two truss rods, and all necessary fittings and hardware as detailed. End post assemblies shall consist of one end post, one brace, one truss rod and all necessary fittings and hardware as detailed.
 - In areas where there are physical constraints outside the right-of-way which restricts the fence construction, the fabric may be installed on the inside of the posts.

TYPE IV VINYL COATED FABRIC							
AASHTO M181 Table 4 Redefined As Follows							
Specified Diameter Of Metallic Coated Core Wire	Minimum Weight Of Zinc Coating	PVC Thickness Range					
		M181 Class A (Extruded Or Extruded And Bonded Coating)	M181 Class B (Bonded Coating)				
in.	mm	in.	mm				
0.148	3.77	0.30	92	0.015 to 0.025	0.38 to 0.64	0.006 to 0.10	0.15 to 0.25

DESIGN NOTE
This index details fencing that is constructed with chain link fabric 6' (nominal) in height and with specific ground clearance. For fencing of different height or installation details, the fence shall be fully detailed in the Contract plans.

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GATE DETAIL

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

H M
HOLE MONTES
ENGINEERS - PLANNERS - SURVEYORS

6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No. 1772

FENCING DETAILS

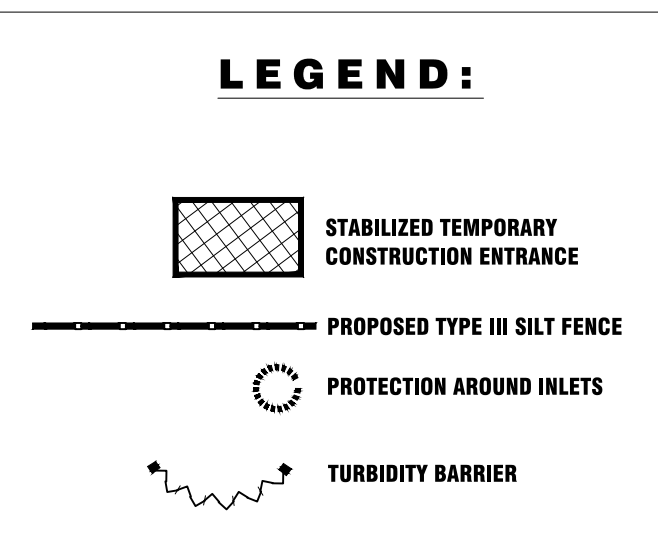
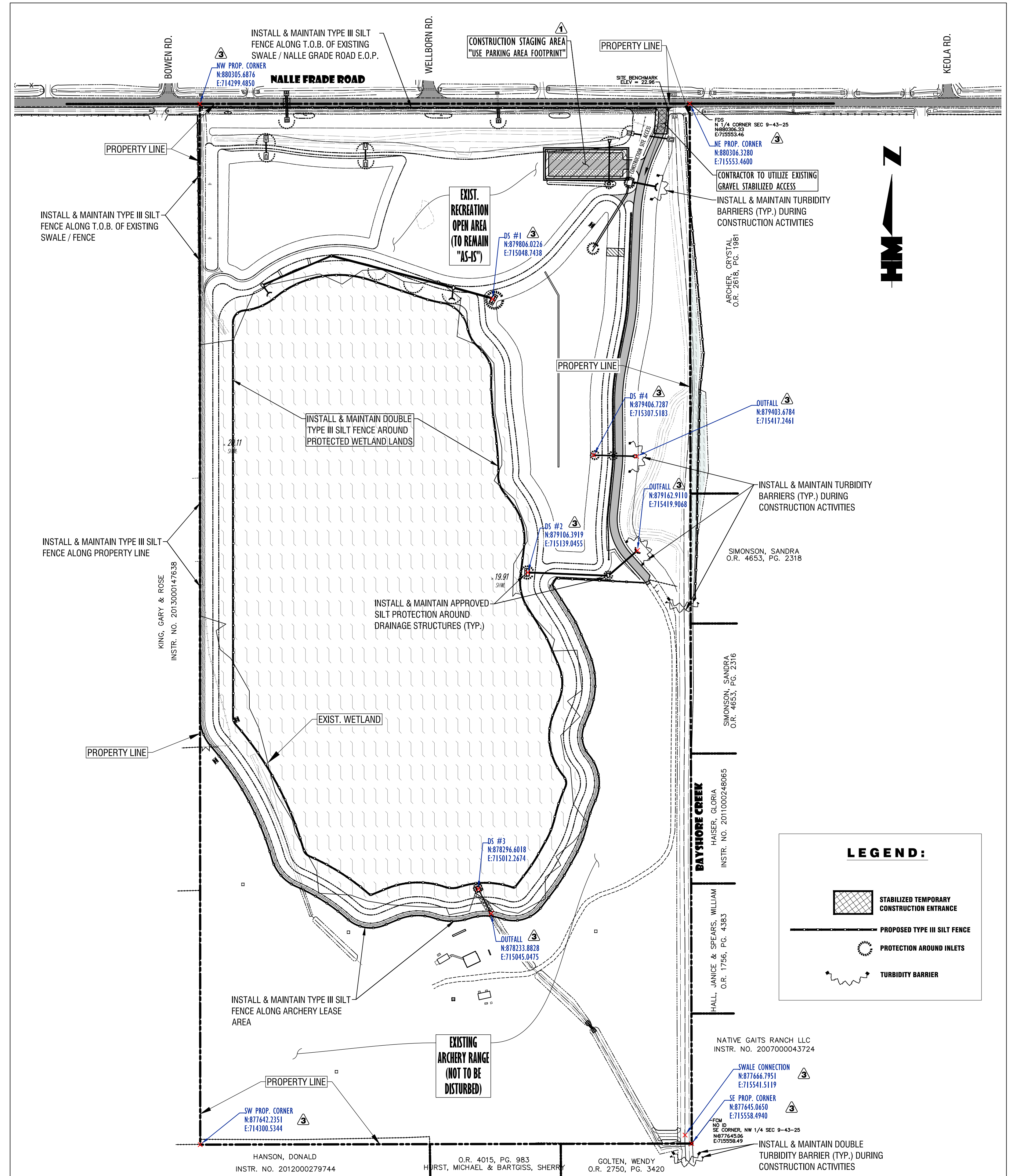
December 07, 2018	THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW.	CAD FILE NAME: 13046.FDET	DRAWING NO.:
PROJECT NO.:	2013046	SHEET NO.:	18

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EROSION CONTROL NOTES:

THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND SERVICES NEEDED TO PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES. THESE MEASURES SHALL CONFORM TO THE PLANS AND SPECIFICATIONS AND ALL STATE AND LOCAL REQUIREMENTS.

1. THE CONTRACTOR SHALL EXERCISE CARE TO PRESERVE THE NATURAL LANDSCAPE AND SHALL CONDUCT CONSTRUCTION OPERATIONS SO AS TO PREVENT ANY UNNECESSARY DESTRUCTION, SCARRING OR DEFACING OF THE NATURAL SURROUNDINGS IN THE VICINITY OF THE WORK AREA. EXCEPT WHERE CLEARING IS REQUIRED FOR PERMANENT WORK, FOR APPROVED CONSTRUCTION ROADS OR FOR EXCAVATION OPERATIONS, ALL TREES, NATIVE SHRUBBERY AND VEGETATION TO BE PRESERVED AND PROTECTED FROM DAMAGE WHICH MAY BE CAUSED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS AND EQUIPMENT.
2. GRADED AREAS ARE TO BE SEEDED AND/OR SODDED WITHIN SEVEN (7) DAYS FOLLOWING EARTH MOVING PROCEDURES. IF THE TIME OF YEAR IS NOT CONDUCTIVE FOR PERMANENT SEEDING, A TEMPORARY MULCH AND/OR SEEDING SHOULD BE USED.
3. REPAIR ALL DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION EQUIPMENT BEFORE THE END OF EACH WORK DAY.
4. SEDIMENT SHALL BE REMOVED FROM SUMP AREAS. THE SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, IN OR ADJACENT TO A STREAM OR FLOOD PLAIN.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION AND UPON OWNER SATISFACTION.
6. THE CONTRACTOR SHALL ABIDE BY ALL RULES AND CONDITIONS OF ERP AND LEE COUNTY PERMITS. ALL DISTURBED SLOPES SHALL BE SODDED WITHIN 48 HOURS OF COMPLETION OF FINAL GRADING. ALL EROSION CONTROL DEVICES (I.E. SYNTHETIC HAY BALES AND SILT FENCES) SHALL BE IN PLACE PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
7. THE CONTRACTOR SHALL CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH ALL APPLICABLE PERMITS, LAWS AND REGULATIONS. CLEANING SHALL BE EXECUTED DAILY TO KEEP THE WORK, SITE AND ADJACENT PROPERTIES FREE FROM ACCUMULATIONS OF WASTE MATERIALS, WATER, ERODED MATERIAL, RUBBISH AND WIND BLOWN DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS.
8. WHERE ADJACENT PROPERTY HAVE BEEN DISTURBED, ALL AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
9. CONTRACTOR SHALL PROTECT EXISTING TREES, SHRUBS, AND OTHER PLANTINGS DURING CONSTRUCTION. WHERE EXISTING PLANTS HAVE BEEN DISTURBED OR NEED TO BE RELOCATED, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND COMPLETE THE WORK TO OWNERS SATISFACTION.
10. ANY DAMAGE TO EXISTING IRRIGATION PIPES, WIRING AND SPRINKLER HEADS SHALL BE REPLACED WITH NEW MATERIAL AT THE CONTRACTOR'S EXPENSE.
11. THIS DRAWING PROVIDE GENERAL EROSION CONTROL INFORMATION ONLY, CONTRACTOR IS RESPONSIBLE FOR OBTAINING NPDES-SPP PERMIT FROM FDEP AND FOR COMPLIANCE WITH ALL PERMIT CONDITIONS. WORK SHALL NOT COMMENCE UNTIL A COPY OF THE PERMIT DOCUMENTS HAVE BEEN RECEIVED BY ENGINEER.



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NUMBER	REVISIONS	DATE
4		
3	LDO REVIEW REVISION - ADDED COORDINATES	11/28/2018
2	REVISION PER LEE COUNTY REVIEW	02/03/2017
1	REVISION PER SPWMD REVIEW	08/12/2016

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
VERTICAL SCALE	HORIZONTAL SCALE



6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No.1772

EROSION AND SEDIMENT CONTROL
PLAN AND NOTES

THESE DRAWINGS ARE NOT APPROVED UNLESS SIGNED & SEALED BELOW:
RICHARD E. BRYLANSKI P.E.
FLORIDA PROFESSIONAL ENGINEER
REGISTRATION #42339
DATE

CAD FILE NAME:	DRAWING NO.:
13046.ESCP	
PROJECT NO.:	SHEET NO.:
2013046	19

December 07, 2018

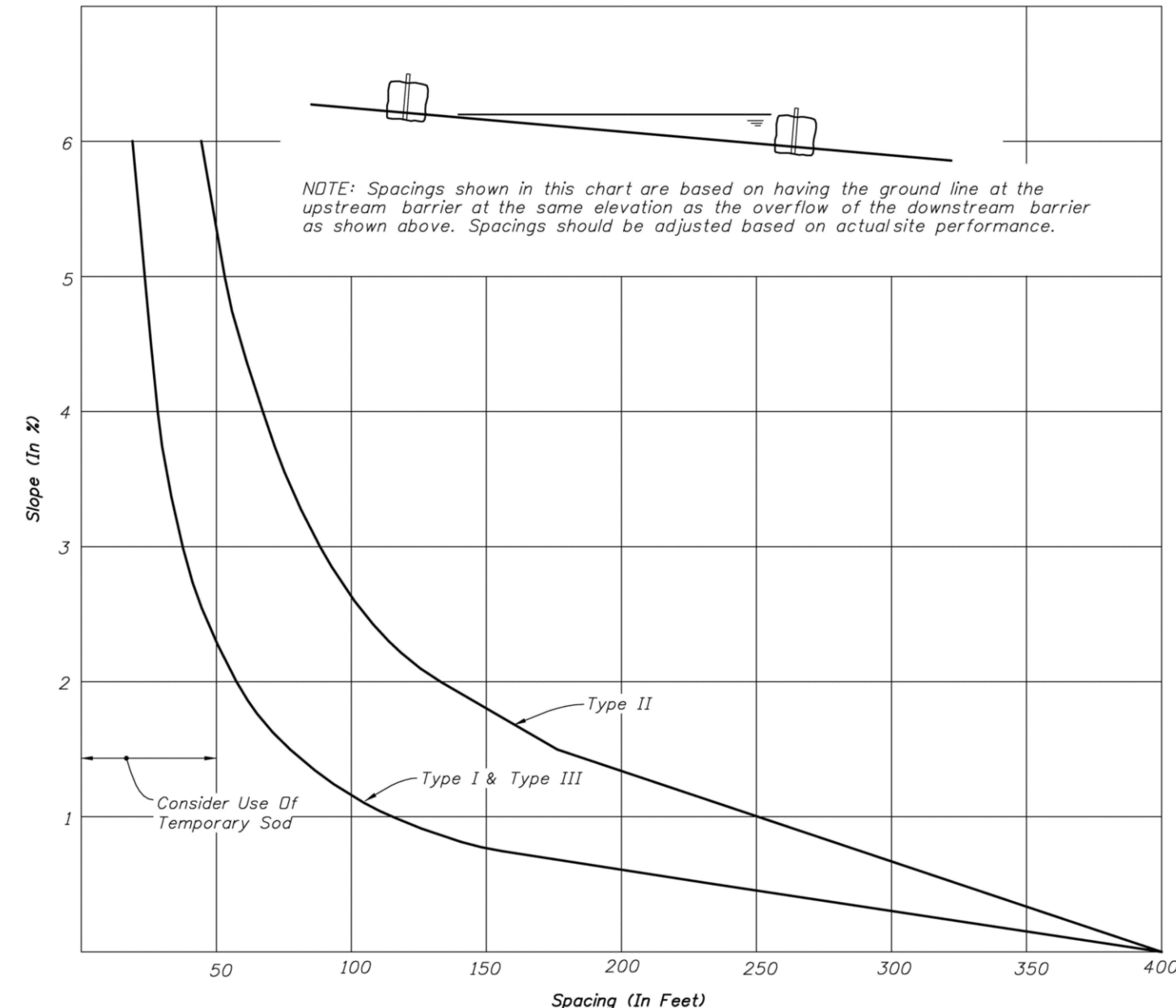
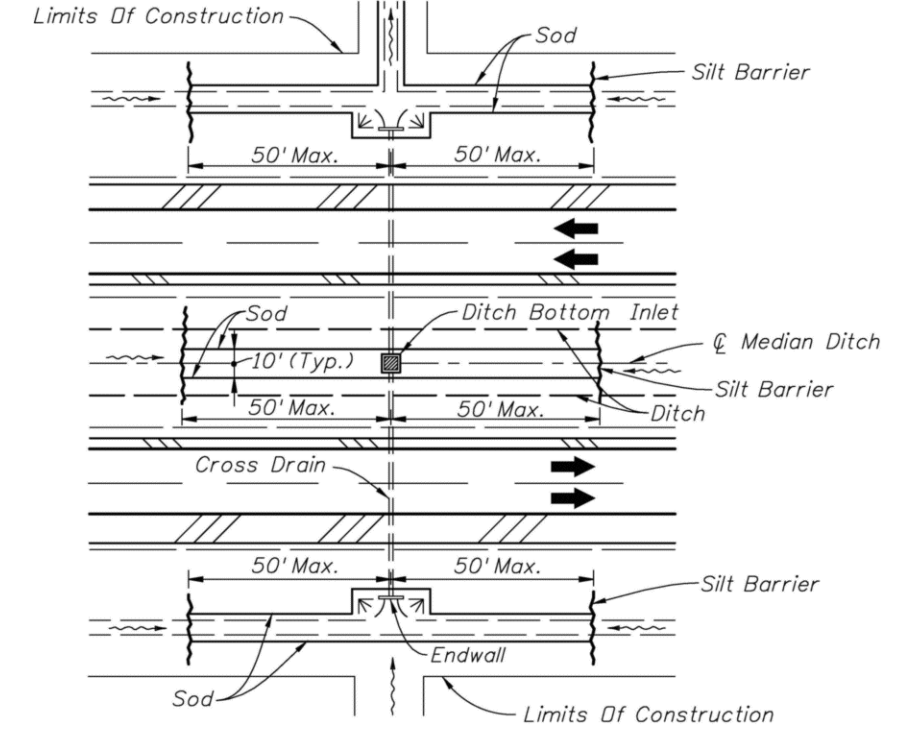
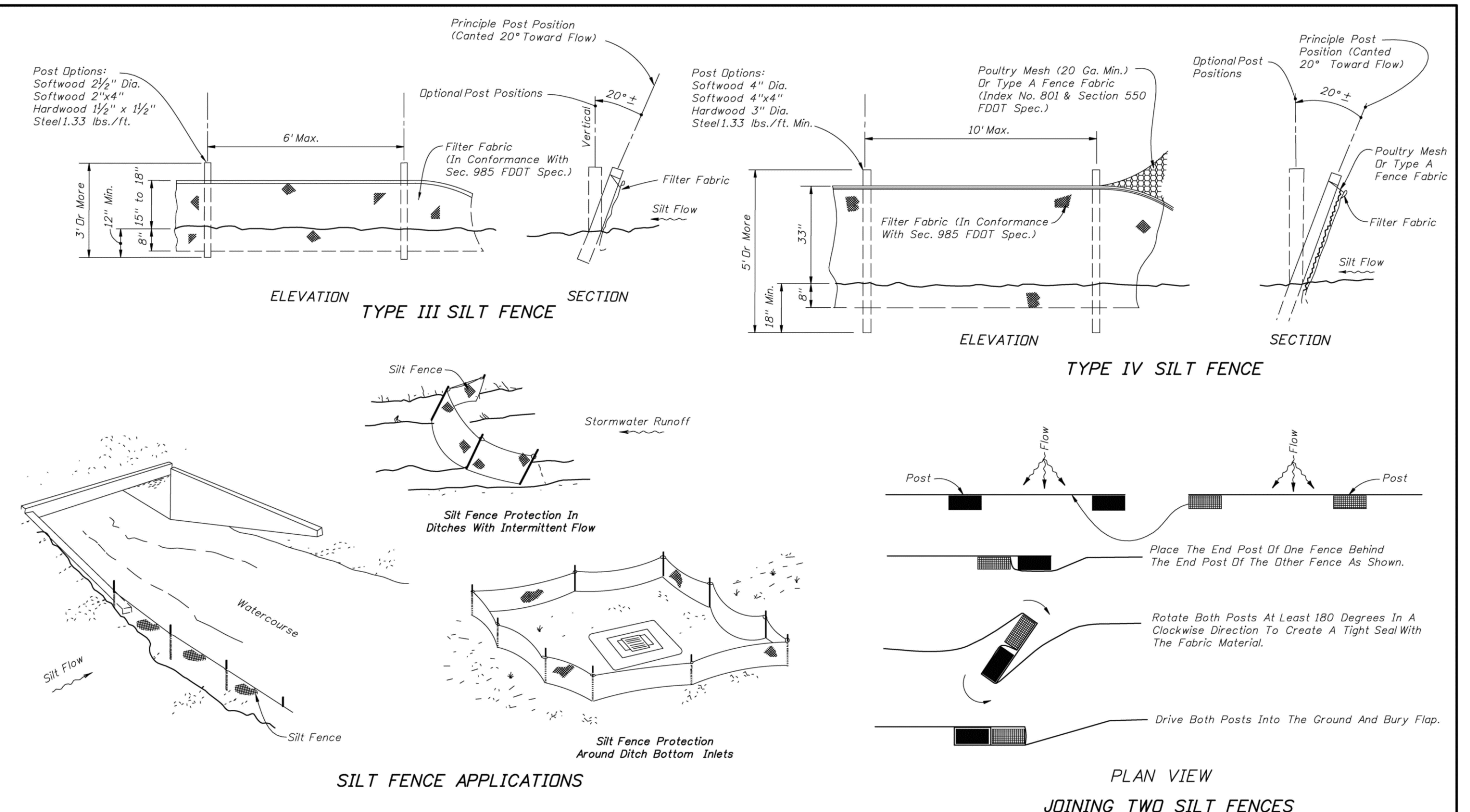


CHART I
RECOMMENDED SPACING FOR SYNTHETIC BALES OR BALE TYPE BARRIERS AND TYPE III SILT FENCE



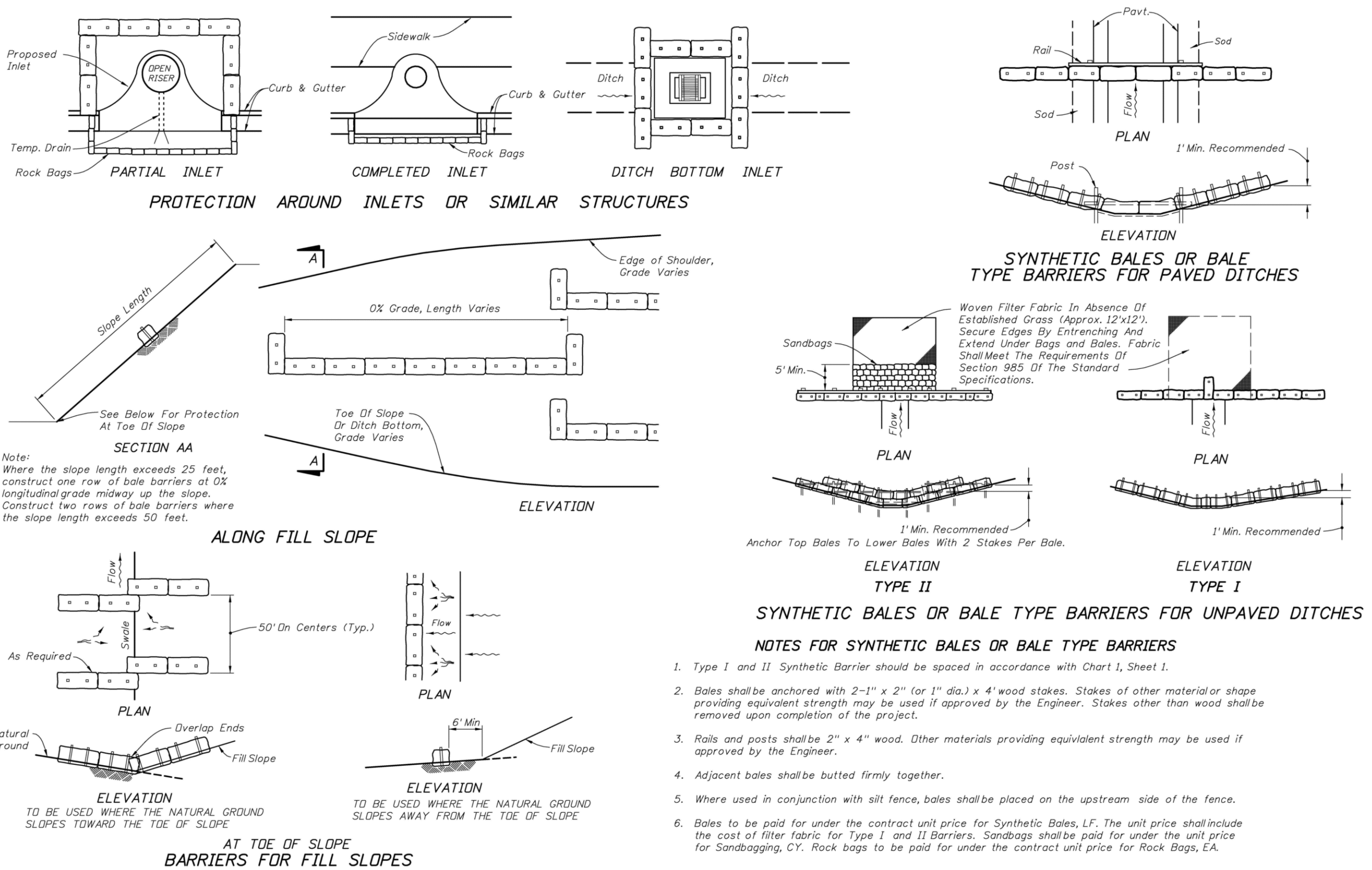
DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

2010 FDOT Design Standards		Last Revision: 07/01/07	Sheet No: 1 of 3
TEMPORARY EROSION AND SEDIMENT CONTROL		Index No: 102	

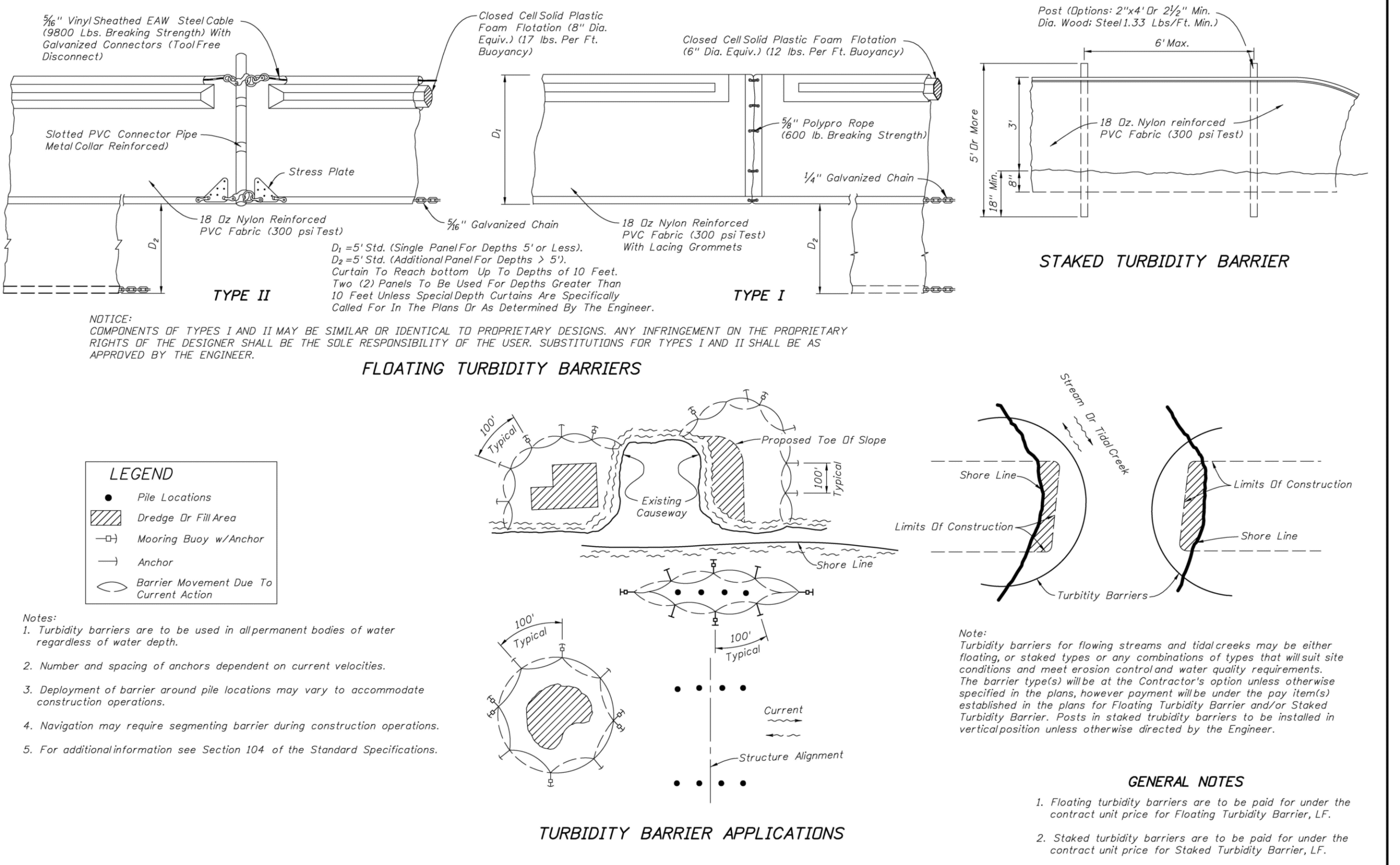


- NOTES FOR SILT FENCES
- Type III Silt Fence to be used at most locations. Where used in ditches, the spacing for Type III Silt Fence shall be in accordance with Chart I, Sheet 1.
 - Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where fill slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travel lanes or off the right of way.
 - Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
 - Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.
 - Silt Fence to be paid for under the contract unit price for Staked Silt Fence, (L.F.).

2010 FDOT Design Standards		Last Revision: 07/01/07	Sheet No: 3 of 3
TEMPORARY EROSION AND SEDIMENT CONTROL		Index No: 102	



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TEMPORARY EROSION AND SEDIMENT CONTROL		Index No: 102	



2010 FDOT Design Standards		Last Revision: 07/01/07	Sheet No: 1 of 1
TURBIDITY BARRIERS		Index No: 103	

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NUMBER	REVISIONS	DATE
4		
3		
2		
1		

Nalle Grade Park Hydrologic Restoration
LEE COUNTY, FLORIDA

DESIGNED BY: DATE: _____
DRAWN BY: VZ DATE: 02/18/15
CHECKED BY: REB DATE: DECEMBER/18
VERTICAL SCALE: N/A HORIZONTAL SCALE: N/A

H M
HOLE MONTES
ENGINEERS - PLANNERS - SURVEYORS

6200 Whiskey Creek Drive
Fort Myers, FL. 33919
Phone: (239) 985-1200
Florida Certificate of
Authorization No. 1772

EROSION AND SEDIMENT CONTROL
DETAILS

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PROJECT NO.: 2013046 SHEET NO.: 20

RICHARD E. GRVANSKI, P.E.
FLORIDA PROFESSIONAL ENGINEER
REGISTRATION #42339
DATE: _____