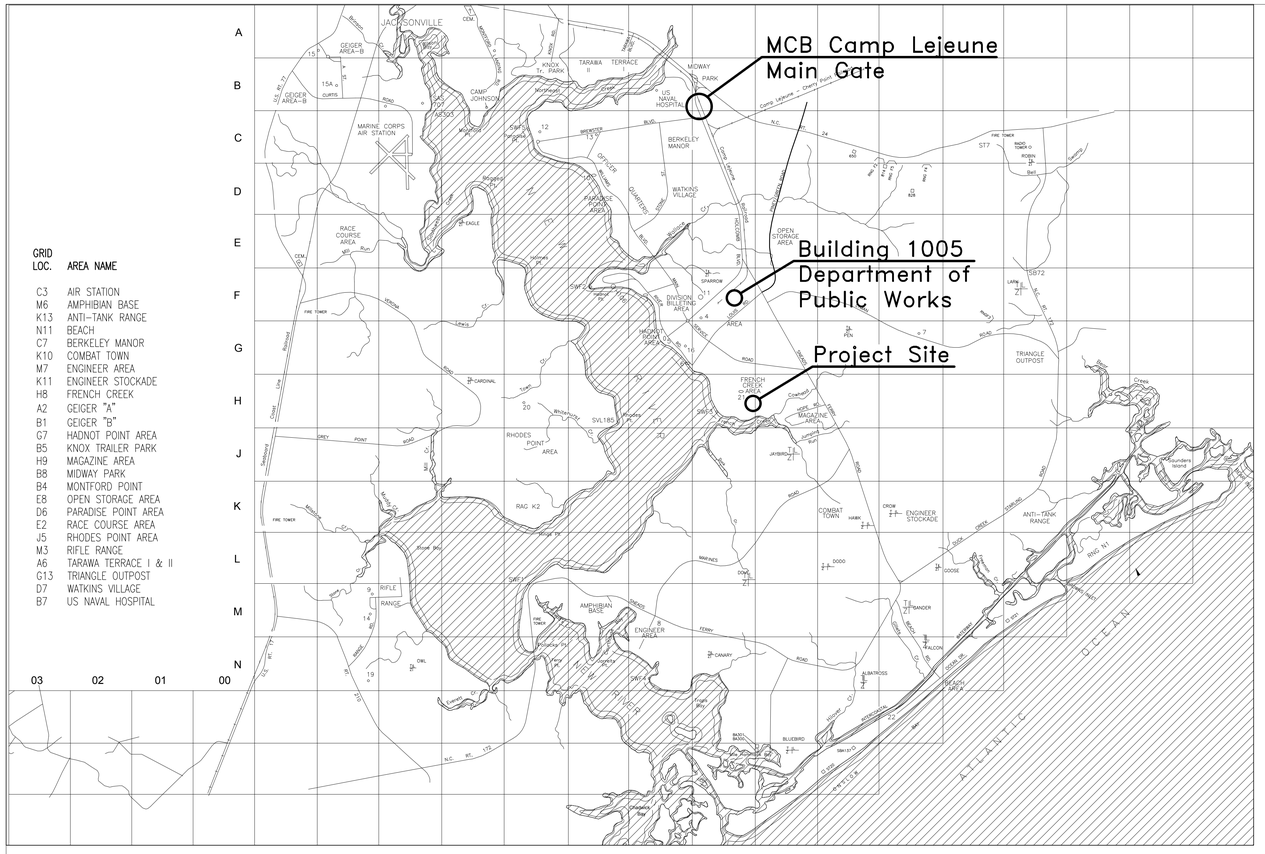
SYM	REVISIONS	DATE	APPROVED

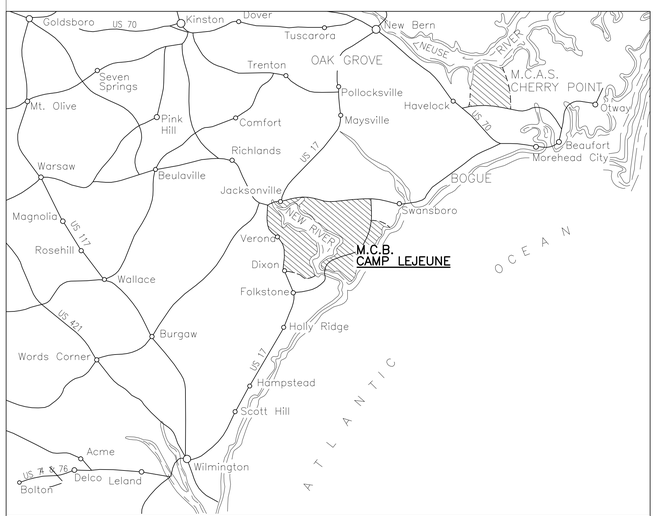
FC436 CLARIFIER REPAIR
MCB CAMP LEJEUNE
CONSTRUCTION CONTRACT NO. N40085-24-D-0011



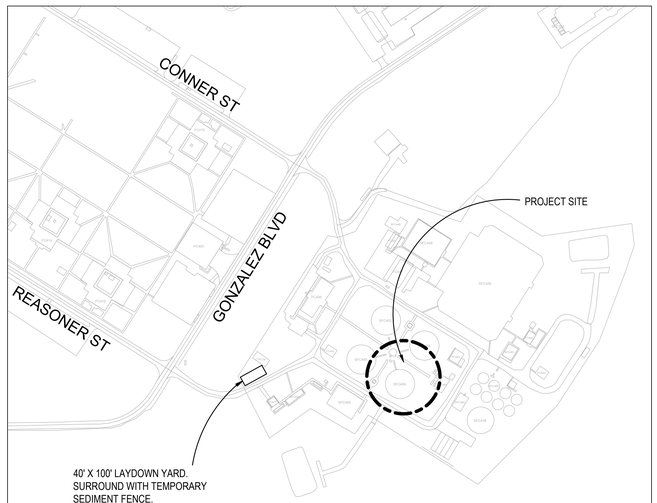
LOCATION MAP - U. S. MARINE CORPS BASE - CAMP LEJEUNE, N.C.

NTS

INDEX OF DRAWINGS			
NAVFAC	SHEET NO.	SHEET	TITLE
60044651	1 OF 20	G-001	COVER SHEET
60044652	2 OF 20	G-002	GENERAL NOTES
60044653	3 OF 20	VF101	EXISTING CONDITIONS
60044654	4 OF 20	VF201	EXISTING SECONDARY CLARIFIER PLAN
60044655	5 OF 20	VF202	EXISTING SECONDARY CLARIFIER SECTIONS
60044656	6 OF 20	C-001	CIVIL NOTES & LEGEND
60044657	7 OF 20	CD101	DEMOLITION PLAN
60044658	8 OF 20	CD201	SECONDARY CLARIFIER DEMOLITION PLAN
60044659	9 OF 20	CD202	SECONDARY CLARIFIER DEMOLITION SECTION
60044660	10 OF 20	CD203	SECONDARY CLARIFIER CENTER PIER DEMOLITION PLAN AND DETAILS
60044661	11 OF 20	CS101	SITE PLAN
60044662	12 OF 20	CG101	GRADING & EROSION CONTROL PLAN
60044663	13 OF 20	CU101	SECONDARY CLARIFIER PLAN
60044664	14 OF 20	CU102	SECONDARY CLARIFIER SECTION
60044665	15 OF 20	CU103	SECONDARY CLARIFIER CENTER PIER PLAN AND DETAILS
60044666	16 OF 20	C-501	CIVIL DETAILS
60044667	17 OF 20	C-502	CIVIL DETAILS
60044668	18 OF 20	E001	GENERAL NOTES, LEGEND, DETAIL AND ABBREVIATIONS
60044669	19 OF 20	ED101	SITE PLAN - DEMOLITION
60044670	20 OF 20	E101	SITE PLAN - NEW WORK



VICINITY MAP - CAMP LEJEUNE, N.C.



SITE LOCATION MAP SCALE: 1" = 250'

NORTH CAROLINA PROFESSIONAL SEAL 051967 7.23.24 ENGINEER ANDREW T. ARNOLD

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
COVER SHEET

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044651
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 1 OF 20

MAAS.CHRISTOPHER.JETT.1588048727

SYM	REVISIONS	DATE	APPROVED

GENERAL NOTES:

1. CONTRACTOR MUST HAVE A COMPLETE SET OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, ADDENDA AND APPROVED PERMITS ON THE JOB SITE AT ALL TIMES.

2. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT WORK REQUIRED TO PROPERLY CONSTRUCT THE WORK.

3. CONTRACTOR MUST MAKE EVERY EFFORT TO SAVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DESTROYED BY THE CONTRACTOR MUST BE REPLACED BY A NORTH CAROLINA LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

4. CONTRACTOR MUST PROVIDE MEASURES AS NECESSARY DURING CONSTRUCTION FOR EROSION & SEDIMENTATION CONTROL, PER THE NCDEQ EROSION & SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL.

5. CONTRACTOR MUST PROTECT EXISTING STRUCTURES, UTILITIES AND ALL OTHER PROPERTY UNLESS THEY ARE TO BE DEMOLISHED. ANY PROPERTY NOT AUTHORIZED FOR REMOVAL, BUT DAMAGED BY THE CONTRACTOR MUST BE RESTORED OR REPLACED BY THE CONTRACTOR TO THE APPROVAL OF THE CONTRACTING OFFICER AT NO ADDITIONAL COST TO THE GOVERNMENT.

6. UTILITY LOCATIONS:

   THE UNDERGROUND UTILITIES SHOWN ARE BASED ON UTILITIES LOCATED FROM FIELD SURVEY INFORMATION. ALL EX. UTILITIES MAY NOT BE SHOWN ON THE DRAWINGS AND LOCATION OF EX. UTILITIES (VERTICALLY AND HORIZONTALLY) ARE SHOWN IN APPROXIMATE MANNER ONLY. THE CONTRACTOR MUST VERIFY LOCATION AND ELEVATION OF EX. UTILITIES BEFORE CONSTRUCTION BEGINS AND COORDINATE CHANGES TO UTILITIES, IF NEEDED, WITH THE CONTRACTING OFFICER.

7. EXISTING UTILITIES MAY NOT BE INTERRUPTED WITHOUT APPROVAL OF THE CONTRACTING OFFICER. IF INTERRUPTION OF UTILITIES IS APPROVED, CONTRACTOR MUST PROVIDE TEMPORARY UTILITIES SERVICES. CONTRACTOR MUST PROVIDE A PLAN FOR DEMOLITION, NEW WORK, AND TIE-INS FOR UTILITIES. PLAN MUST LIST POINTS OF CONTACT AND INCLUDE SEQUENCE OF CONSTRUCTION.

8. CONTRACTOR MUST BE RESPONSIBLE FOR RELOCATION OF EXISTING UTILITIES REQUIRED DURING INSTALLATION OF NEW WORK. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE RELOCATION OF EXISTING UTILITIES. CONTRACTOR MUST BEAR ALL COST ASSOCIATED WITH UTILITY RELOCATION.

9. ALL PAVEMENT DAMAGED DURING CONSTRUCTION, INCLUDING GOUGES, MUST BE REPAIRED TO THE APPROVAL OF THE CONTRACTING OFFICER. NO ADDITIONAL PAYMENT WILL BE MADE FOR PAVEMENT REPAIR. CONTRACTOR MUST BEAR ALL COST ASSOCIATED WITH PAVEMENT REPAIR.

10. CONTRACTOR MUST REMOVE AND LEGALLY DISPOSE OF ALL CONSTRUCTION WASTE AND EXCESS SOILS OFF OF GOVERNMENT PROPERTY IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS.

11. BURNING ON-BASE IS NOT PERMITTED AT ANY TIME.

12. CONTRACTOR MUST REPAIR ANY DAMAGE DONE TO EXISTING FACILITIES LOCATED OUTSIDE THE LIMITS OF WORK DUE TO CONSTRUCTION ACTIVITIES. CONTRACTOR MUST REPAIR ALL SITE ELEMENTS TO EXISTING OR BETTER CONDITIONS IF DISTURBED DURING CONSTRUCTION.

13. CONTRACTOR MUST OBTAIN ALL REQUIRED PERMITS AND APPROVALS PRIOR TO BEGINNING CONSTRUCTION.

14. CONTRACTOR MUST MINIMIZE DUST BY USE OF WET METHODS OR OTHER APPROVED METHOD.

15. ALL DEBRIS HAULING TRUCKS MUST FULLY COVER LOADS WHEN HAULING MATERIALS FROM THE SITE.

16. CONTRACTOR MUST COORDINATE AND ESTABLISH A LAYDOWN AREA WITH THE CONTRACTING OFFICER. CONTRACTOR MUST SUBMIT A REQUEST AND OBTAIN APPROVAL FOR LAYDOWN AREA A MINIMUM OF TWO WEEKS PRIOR TO BEGINNING OF CONSTRUCTION.

17. EXCAVATION AND CONSTRUCTION MUST PROCEED IN ACCORDANCE WITH LATEST OSHA REGULATIONS.

18. ACCESS TO THE CONSTRUCTION SITES AND LAYDOWN AREA MUST BE ONLY AS DIRECTED BY THE CONTRACTING OFFICER. THE CONTRACTOR MUST NOT USE ANY ROADS, GROUNDS AND OTHER FACILITIES WHICH HAVE NOT BEEN SPECIFICALLY AUTHORIZED FOR USE. CONTRACTOR MUST COORDINATE ACCESS VIA GATES WITH CONTRACTING OFFICER.

19. ROADS AND ACCESS ROUTES USED BY THE CONTRACTOR DURING THE PERFORMANCE OF THE WORK MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES. ALL ROADS AND ACCESS ROADS MUST BE LEFT IN A CONDITION SATISFACTORY TO THE CONTRACTING OFFICER, INCLUDING UPON COMPLETION OF THE WORK.

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN

G-002

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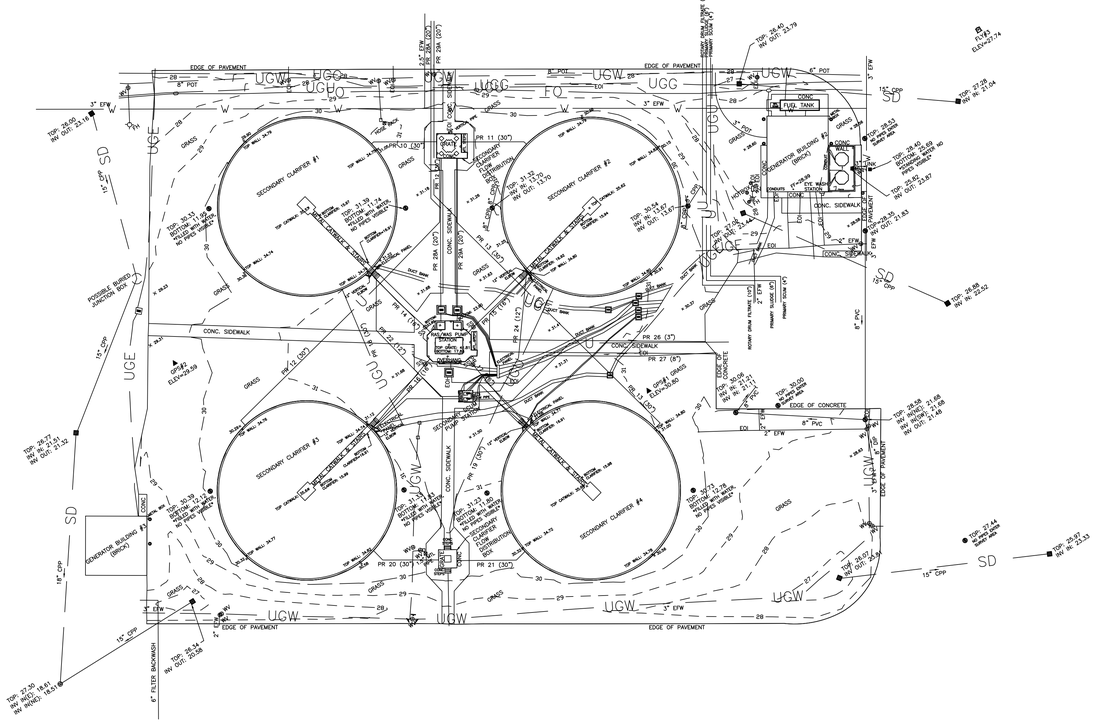
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
GENERAL NOTES

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044652
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 2 OF 20

Christopher Maas 29-Jul-2026



A1 EXISTING CONDITIONS

SCALE 1" = 40'

PLAN NORTH

LEGEND AND ABBREVIATIONS

DATUR	DRAWN ACCORDING TO UTILITY RECORD
DIP	DUCTILE IRON PIPE
CPP	CORRUGATED PLASTIC PIPE
PVC	POLYVINYL CHLORIDE PIPE
EOI	END OF INFORMATION
PR	PROCESS LINE
RAS	RETURN ACTIVATED SLUDGE
POT	POTABLE WATER
EFW	EFFLUENT FLUSHING WATER

- APPROX. DIRECTION OF UTILITY, ORIGIN/DESTINATION UNKNOWN
- SURVEY CONTROL POINT
- BOLLARD
- VAULT
- YARD INLET GRATE
- STORM DRAIN MANHOLE
- SS ⊗ SANITARY VALVE
- HAND HOLE
- UTILITY MARKER POST
- [E] ELECTRIC BOX
- POST
- WV ⊗ WATER VALVE
- FH ⊹ FIRE HYDRANT
- WATER SPIGOT
- SANITARY SEWER MANHOLE

- HANDRAIL
- UGG — UNDERGROUND GAS
- UNDERGROUND FIBEROPTIC
- UGT — UNDERGROUND TELEPHONE
- UGW — UNDERGROUND WATER LINE
- UGU — UNDERGROUND UNKNOWN UTILITY
- UGE — UNDERGROUND ELECTRIC
- SD — STORM DRAIN PIPE
- SANITARY SEWER PIPE
- FM — FORCE MAIN (DATUR)
- UNKNOWN UNDERGROUND UTILITIY (DATUR)
- W — UNDERGROUND WATER LINE (DATUR)

TOPOGRAPHIC SURVEY NOTES:

1. THIS TOPOGRAPHIC SURVEY IS BASED ON A SURVEY PERFORMED BY DEWBERRY ENGINEERS INC. ON MARCH 9–12, 2026.
2. HORIZONTAL CONTROL (NAD83/2011) AND VERTICAL CONTROL (NAVD88) ESTABLISHED BY GPS OBSERVATIONS AND COMPUTED USING NORTH CAROLINA GEODETIC SURVEY VIRTUAL REFERENCE STATION SERVICE (VRS), YIELDING VALUES OF:

POINT #	NORTHING(Y)	EASTING(X)	ELEV(Z)	DESCRIPTION
1	329225.886	2503163.374	30.795	60d NAIL
2	329406.056	2502911.707	29.588	60d NAIL

3. NORTH ARROW IS GRID NORTH AND ALL DISTANCES ARE GROUND DISTANCES. PROJECT LOCALIZED ON POINT GPS #1. COMBINED GRID FACTOR (GRID TO GROUND) EQUALS 1.0000670103628O.
4. LOCATIONS OF UTILITIES SHOWN ON THIS SURVEY WERE DETERMINED BY OBSERVED EVIDENCE, LOCATION OF ABOVE GROUND UTILITY APPURTENANCES, UTILITY RECORDS PROVIDED BY THE CLIENT AND UTILITY MARKINGS (PAINT, ETC.) PROVIDED BY DEWBERRY. THESE MARKINGS WERE OBSERVED DURING THE COURSE OF THIS SURVEY, WERE FIELD LOCATED, ARE SHOWN FOR INFORMATIONAL PURPOSES, AND SHOULD BE FIELD VERIFIED IF CRITICAL. UNDERGROUND UTILITIES NOT SHOWN, MAY EXIST. STORM SEWER AND SANITARY SEWER DATA HAS BEEN COLLECTED FROM THE RIM OF THE MANHOLE WITHOUT ENTERING THE STRUCTURE. PIPE SIZES AND TYPES SHOULD BE CONSIDERED APPROXIMATE AND BE FIELD VERIFIED IF CRITICAL. STRUCTURES LABELED "VAULT", IF ANY, INDICATE A SUBSTRUCTURE WITH LIMITED VISUAL ACCESS AND INVERT INFORMATION.

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF001 FOR SURVEY NOTES & LEGEND

GRAPHIC SCALE(S)

0 40' 80'

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN | VF101

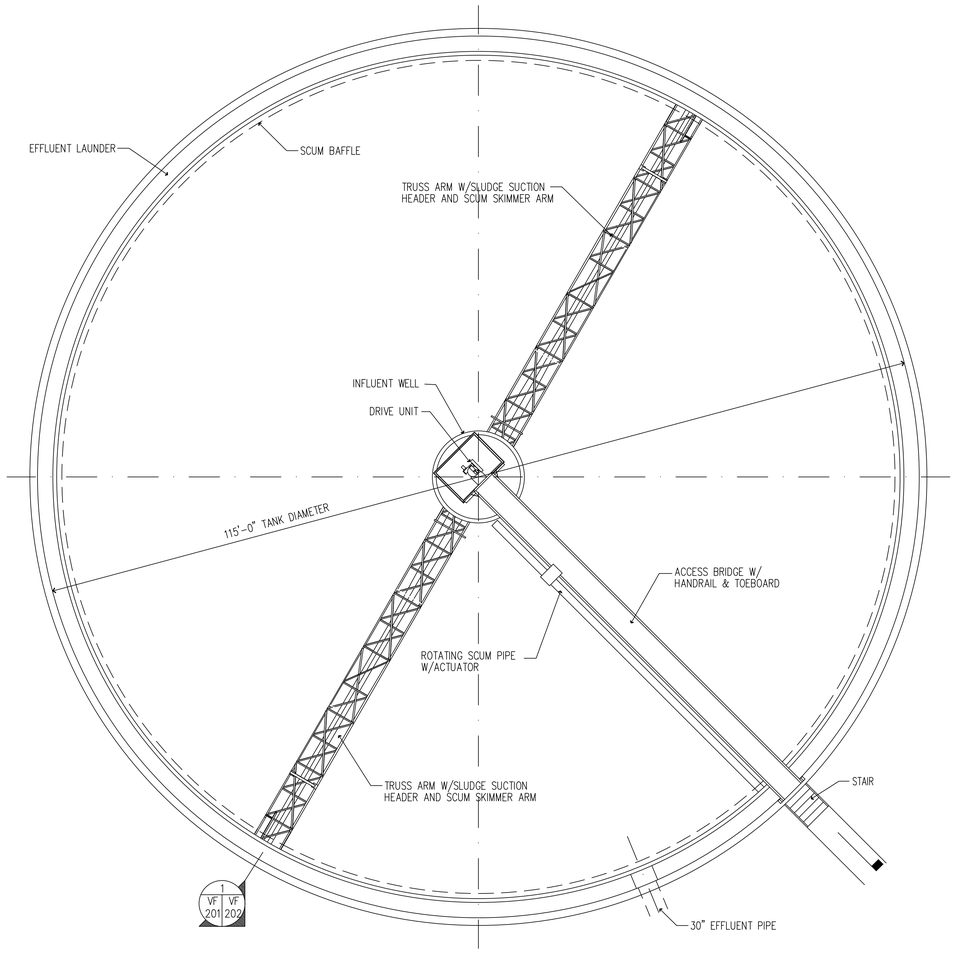
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
EXISTING CONDITIONS

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

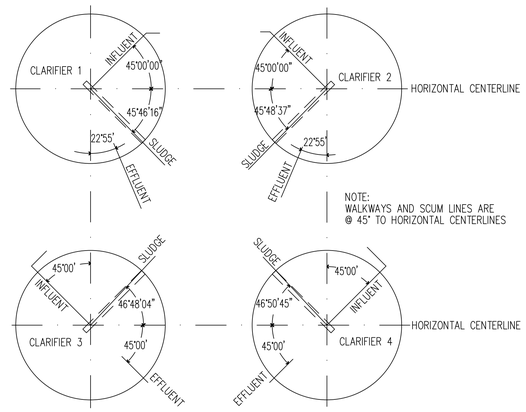
SIZE E1 | CODE IDENT.NO XXXXX | NAVFAC DRAWING NO. 60044653
CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED | SPEC. 24-0045 | SHEET 3 OF 20

Christopher Maas 29-Jul-2026



PLAN CLARIFIER NO 1

1/8"=1'-0"



CLARIFIERS ORIENTATION PLAN

NO SCALE

A1 EXISTING SECONDARY CLARIFIER PLAN

SCALE 1/8" = 1'

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

1. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS FROM BASEWIDE TREATMENT PLANT UPGRADE PHASES II AND III - JAN 1997.

GRAPHIC SCALE(S)

0' 4' 8' 16'

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

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN **VF201**

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
EXISTING SECONDARY CLARIFIER PLAN

DES.	DR		
DR.	MC		
CHK.	AA		
SUBMITTED BY:	JH		
DESIGN DIR.			
APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO
PWO	MM/DD/YYYY	E1	XXXXX
SATISFACTORY TO:	DATE		
NAME	MM/DD/YYYY		

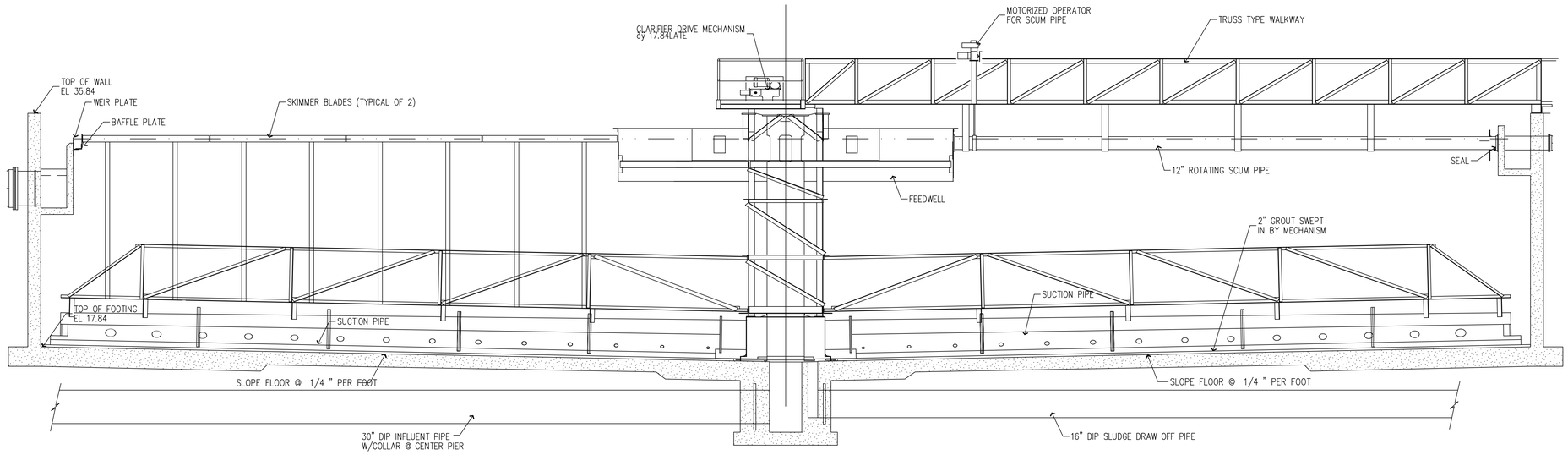
NAVFAC DRAWING NO. 60044654
CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED SPEC. 24-0045 SHEET 4 OF 20

Christopher Maas 29-Jul-2026

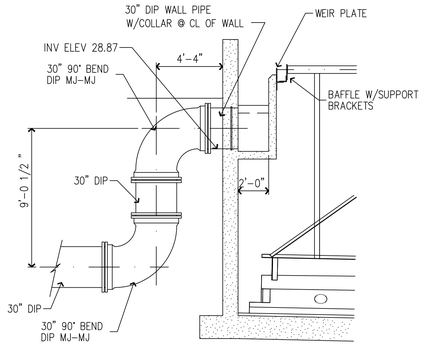
SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

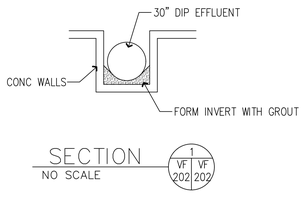
1. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS FROM BASEWIDE TREATMENT PLANT UPGRADE PHASES II AND III - JAN 1997.



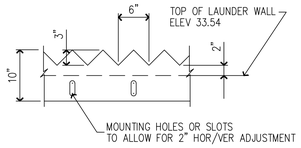
SECTION
1/4 "=1'-0"
1 VF 201 VF 202



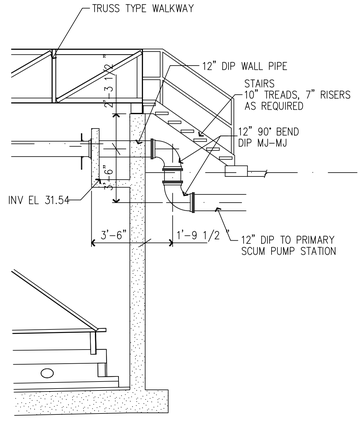
EFFLUENT PIPE DETAIL
1/4 "=1'-0"



SECTION
NO SCALE
1 VF 202 VF 202



WEIR PLATE DETAIL
NO SCALE



SCUM PIPE DETAIL
1/4 "=1'-0"

GRAPHIC SCALE(S)

0' 2' 4' 8'
SCALE: 1/4" = 1' - 0"

A1 EXISTING SECONDARY CLARIFIER SECTIONS
SCALE 1/4" = 1'

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN — VF202

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

24-0045
FC436 CLARIFIER REPAIR
EXISTING SECONDARY CLARIFIER SECTIONS

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
PWO	MM/DD/YYYY	E1	XXXXX	60044655
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED	SPEC. 24-0045	SHEET 5 OF 20

Christopher Maas 29-Jul-2026

CONTRACTOR LAYDOWN AREA NOTES:

1. THE CONTRACTOR'S PERSONNEL MUST WEAR IDENTIFICATION AT ALL TIMES.
2. THE CONTRACTOR MUST HAVE AT LEAST ONE EMPLOYEE ON SITE TO RECEIVE AND DIRECT PLACEMENT OF DELIVERED MATERIALS AND SUPPLIES.
3. ACCESS TO THE CONTRACTOR'S ON-SITE STAGING AREA IS LIMITED TO NORMAL WORK HOURS : 7 A.M. TO 4:30 P.M (SUBJECT TO CHANGE), MONDAY THROUGH FRIDAY, EXCLUDING HOLIDAYS UNLESS APPROVED BY CONTRACTING OFFICER.
4. THE CONTRACTOR MUST REMOVE AND DISPOSE OF ALL DEBRIS, EXCESS SOIL AND MATERIAL, AND CONSTRUCTION DERIVED WASTES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, LOCAL AND MCAS CHERRY POINT REGULATIONS AND REQUIREMENTS.
5. CONTRACTOR MUST RESTORE ANY AREA DAMAGED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS AND ACTIVITIES. AREAS INCLUDE BUT ARE NOT LIMITED TO CONTRACTOR LAYDOWN AREA, BATCH PLANT SITE, AND ROADS USED TO ACCESS PROJECT SITES. CONTRACTOR MUST DOCUMENT EXISTING CONDITIONS OF ALL AREAS PRIOR TO CONSTRUCTION AND ENSURE THAT CONDITION OF AREAS AFTER CONSTRUCTION IS EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITION. FINAL RESTORATION ACCEPTANCE WILL BE BY, OR AT THE DIRECTION OF, THE CONTRACTING OFFICER.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PROVIDING UTILITIES, AS NEEDED, FOR THE CONTRACTOR'S WORK AND THE OPERATION OF THE BATCH PLANT. SEE SPECIFICATION SECTION 01 50 00 "TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS".
7. CONCRETE WASHOUT IS ONLY ALLOWED WITHIN THE CONTRACTOR'S STAGING AREA OR BATCH PLANT AREA. CONCRETE WASHOUT MUST BE PERFORMED IN ACCORDANCE WITH THE DETAIL ON SHEET C-502 AND WITH NCDEQ REQUIREMENTS.
8. INTERIOR OF CONCRETE HAULING TRUCKS MUST BE WASHED OUT BETWEEN LOADS.

EROSION AND SEDIMENT CONTROL NOTES::

1. THE NPDES CONSTRUCTION PERMIT REQUIRES EROSION CONTROL DEVICES AND STORM WATER OUTFALLS BE INSPECTED WEEKLY AND WITHIN 24 HRS OF A 1-INCH RAIN EVENT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT THESE INSPECTIONS AND MAINTAIN RECORDS UNTIL THE AREA HAS STABILIZED, EVIDENT BY 95% VEGETATIVE GROWTH FOR AREAS PROVIDED SEEDING. TO FACILITATE RAINFALL MONITORING A RAIN GAUGE IS REQUIRED TO BE ON SITE. ADDITIONALLY, THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING "SELF INSPECTIONS" INDICATING THE DATE BMPS ARE INSTALLED AND STABILIZATION MEASURES (SEEDING/MULCHING OR SOD) ARE INITIATED. BOTH INSPECTIONS ARE RECORDED ON THE SAME REPORT FORM AND MUST BE MAINTAINED BY THE CONTRACTOR AT THE ONSITE OFFICE. ONCE STABILIZATION HAS BEEN ACCOMPLISHED INSPECTION RECORDS ARE TO BE FORWARDED TO EAD AND ALL TEMPORARY EROSION/SEDIMENTATION CONTROL DEVICES REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING COMPLIANCE WITH ALL PERMITS AND PLANS, ANY CHANGES WILL BE APPROVED BY THE STATE PRIOR TO EXECUTION. A COPY OF THE EROSION AND SEDIMENTATION (ES) CONTROL PLAN, ES LETTER OF APPROVAL, NPDES CONSTRUCTION PERMIT, AND NPDES CERTIFICATE OF COVERAGE WILL BE MAINTAINED BY THE CONTRACTOR AT THE ONSITE OFFICE. IF SOIL IS REMOVED FROM OR BROUGHT ONSITE, THE APPLICABLE SOLID WASTE MANAGEMENT PERMIT NUMBER, EROSION SEDIMENTATION PERMIT NUMBER OR MINE PERMIT NUMBER WILL BE DISCLOSED.

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	
(b) High Quality Water (HQW) Zones	7	
(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

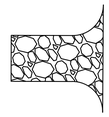
STABILIZE THE GROUND SUFFICIENTLY SO THAT RAIN WILL NOT DISLODGE THE SOIL. USE ONE OF THE TECHNIQUES IN THE TABLE BELOW:

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

CIVIL LEGEND:

LIMITS OF DISTURBANCE — LOD — LOD —

CONSTRUCTION ENTRANCE



TEMPORARY SEDIMENT FENCE — SF —

DEMOLISH

SYM	REVISIONS	DATE	APPROVED

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

FINAL DESIGN

C-001

NRW ENGINEERING
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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

24-0045
FC436 CLARIFIER REPAIR
CIVIL NOTES & LEGEND

Dewberry
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919.881.9939
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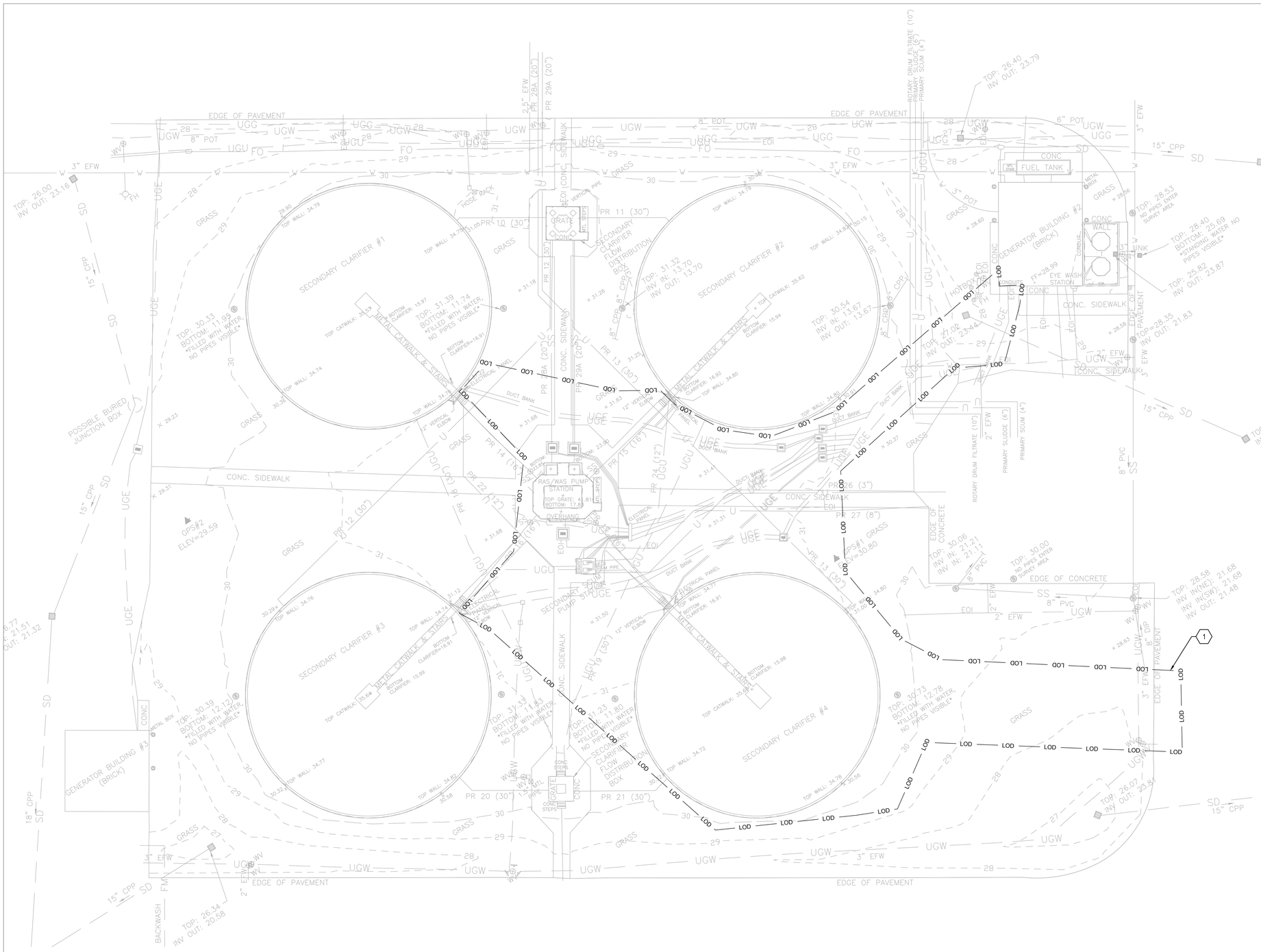
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044656
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 6 OF 20

Christopher Maas 29-Jul-2026



A1 DEMOLITION PLAN
SCALE 1" = 20'

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. REFER TO ELECTRICAL PLANS FOR LOCATIONS OF SIDEWALK DEMOLITION. SIDEWALK SHALL BE SAWCUT AT THE NEAREST JOINTS AND REPLACED AS A FULL SLAB.

(#) CONSTRUCTION KEYNOTES

(1) LIMITS OF DISTURBANCE

GRAPHIC SCALE(S)

0 20' 40'

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN **CD101**

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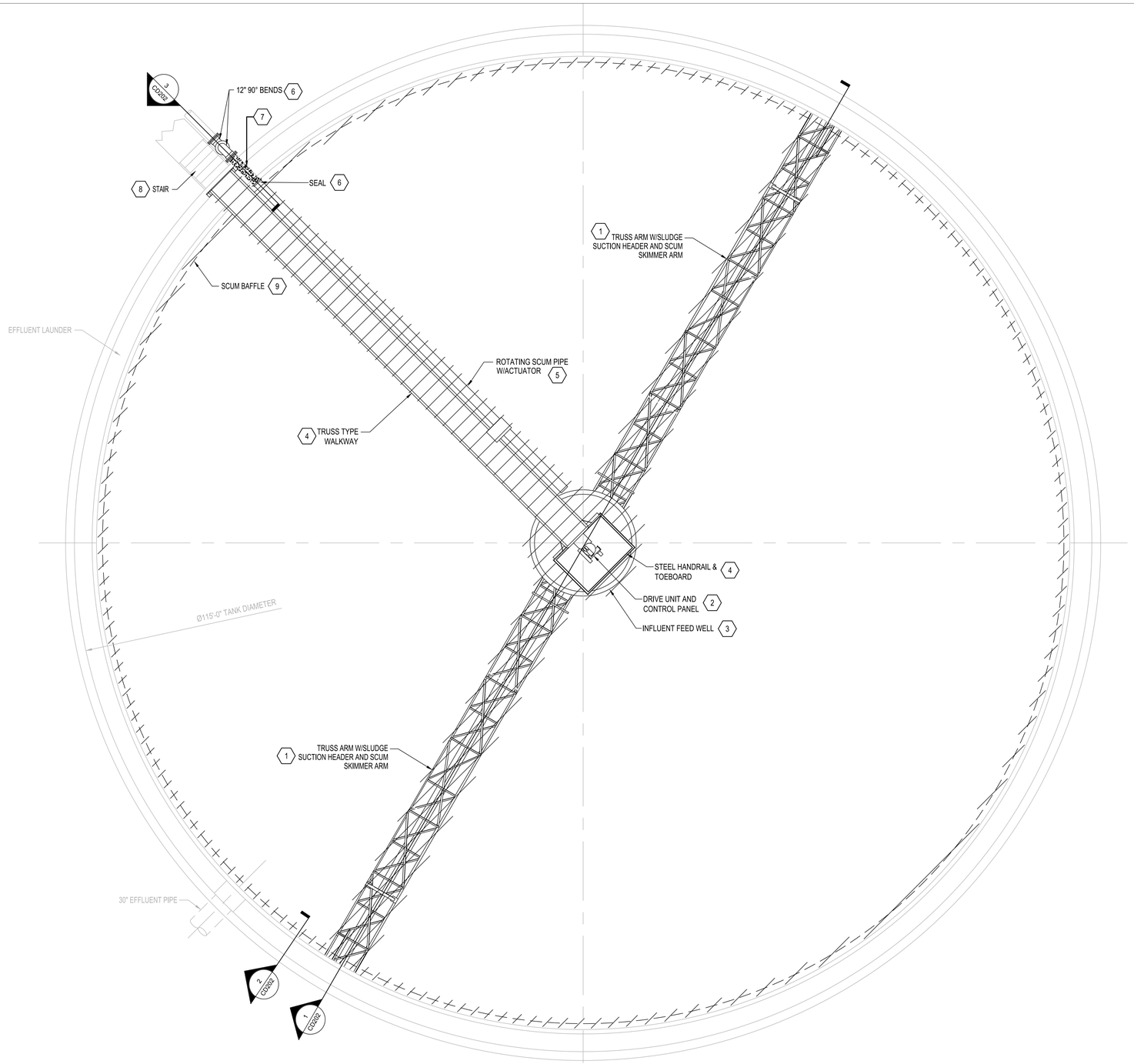
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
DEMOLITION PLAN

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044657
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 7 OF 20

Christopher Maas 29-Jul-2026



SECONDARY CLARIFIER DEMOLITION PLAN

SCALE 3/16" = 1'-0"

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. CONTRACTOR TO CHIP OUT SHAPING GROUT IN FLOOR TO PREP FOR INSTALLATION OF NEW GROUT.

CONSTRUCTION KEYNOTES

(#)

1. DEMOLISH TRUSS ARM, INFLUENT FEED WELL, SLUDGE SUCTION HEADER, SKIMMER ARM, RAKE AND SCRAPER ARM SYSTEM TYP.
2. DEMOLISH DRIVE UNIT AND CONTROL PANEL.
3. DEMOLISH INFLUENT WELL.
4. DEMOLISH, TRUSS TYPE WALK, STEEL HANDRAIL, AND TOEBOARD.
5. DEMOLISH SCUM COLLECTION SYSTEM, SCUM BOX, SCUM PIPE SEAL, ROTATING SCUM PIPE AND ACTUATOR.
6. DEMOLISH (2) 12" 90° BENDS.
7. EXISTING 12" SCUM PIPE TO BE PLUGGED W/ NON-SHRINK GROUT
8. REMOVE AND REINSTALL STAIRS
9. DEMOLISH SCUM BAFFLE AND SUPPORTS.

SHEET LEGEND

DEMOLISH

GRAPHIC SCALE(S)

0' 4' 8' 12'

SCALE: 3/16" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

FINAL DESIGN

CD201

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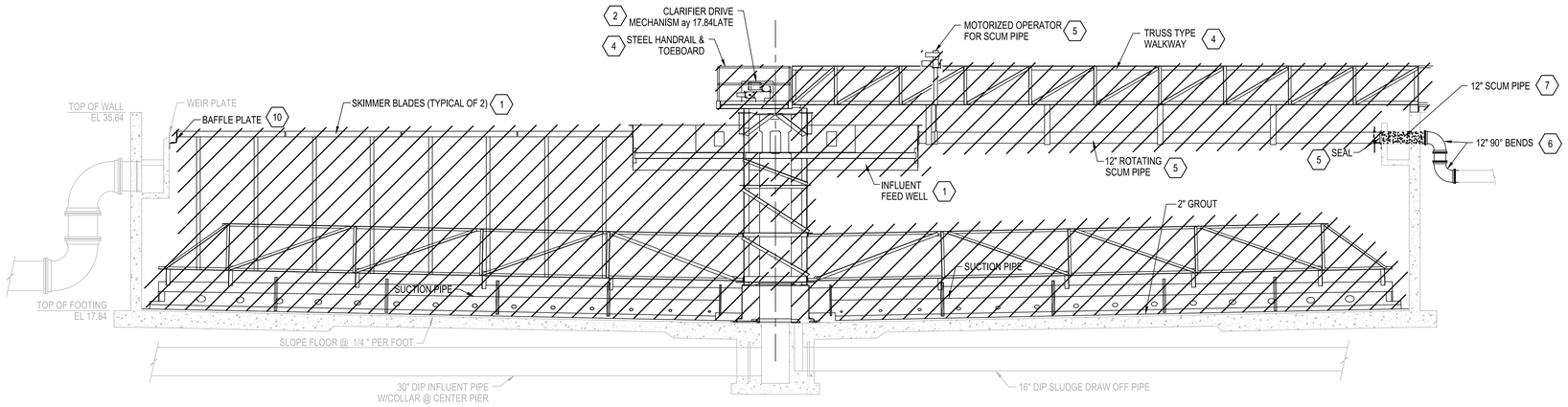
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER DEMOLITION PLAN

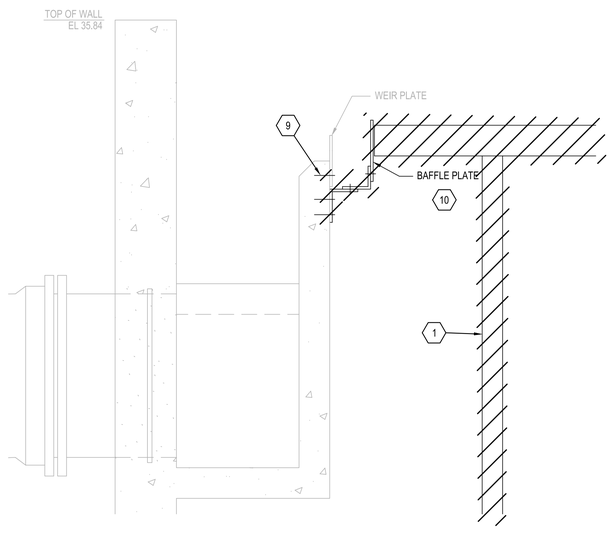
DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

SIZE	CODE IDENT,NO	NAVFAC DRAWING NO.
E1	XXXXX	60044658
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 8 OF 20

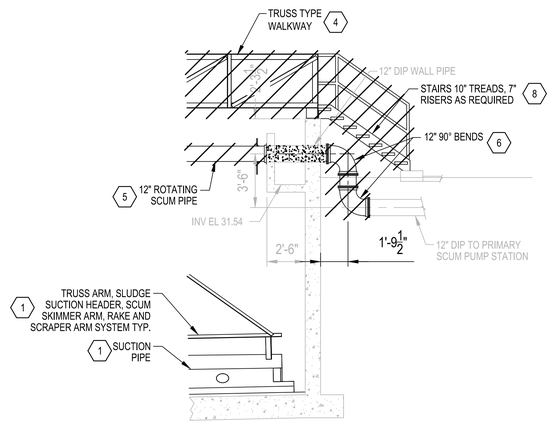
Christopher Maas 29-Jul-2026



1 SECONDARY CLARIFIER DEMOLITION SECTION
SCALE 3/16" = 1'-0"



2 WEIR PLATE AND SCUM BAFFLE DETAIL
SCALE: 1" = 1'-0"



3 SCUM PIPE DETAIL
SCALE: 1/4" =1'-0"

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. CONTRACTOR TO CHIP OUT SHAPING GROUT IN FLOOR TO PREP FOR INSTALLATION OF NEW GROUT.

CONSTRUCTION KEYNOTES

1. DEMOLISH TRUSS ARM, INFLUENT FEED WELL, SLUDGE SUCTION HEADER, SKIMMER ARM, RAKE AND SCRAPER ARM SYSTEM TYP.
2. DEMOLISH DRIVE UNIT AND CONTROL PANEL.
3. DEMOLISH INFLUENT WELL.
4. DEMOLISH, TRUSS TYPE WALK, STEEL HANDRAIL, AND TOEBOARD.
5. DEMOLISH SCUM COLLECTION SYSTEM, SCUM BOX, SCUM PIPE SEAL, ROTATING SCUM PIPE AND ACTUATOR.
6. DEMOLISH (2) 12" 90° BENDS.
7. EXISTING 12" SCUM PIPE TO BE PLUGGED W/ NON-SHRINK GROUT
8. REMOVE AND REINSTALL STAIRS
9. REPLACE EXISTING GALVANIZED FASTENERS WITH STAINLESS STEEL FASTENERS.
10. DEMOLISH SCUM BAFFLE AND SUPPORTS.

SHEET LEGEND

DEMOLISH

GRAPHIC SCALE(S)

SCALE: 1/4" = 1' - 0"

SCALE: 1" = 1' - 0"

SCALE: 3/16" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 ENGINEER ANDREW T. ARNOLD 7.23.26

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FINAL DESIGN — CD202

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER DEMOLITION SECTION

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
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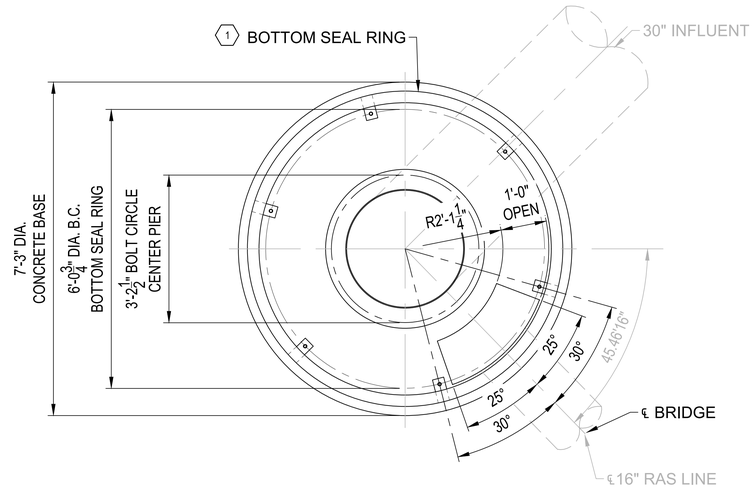
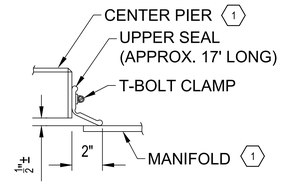
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED	SPEC. 24-0045	SHEET 9 OF 20

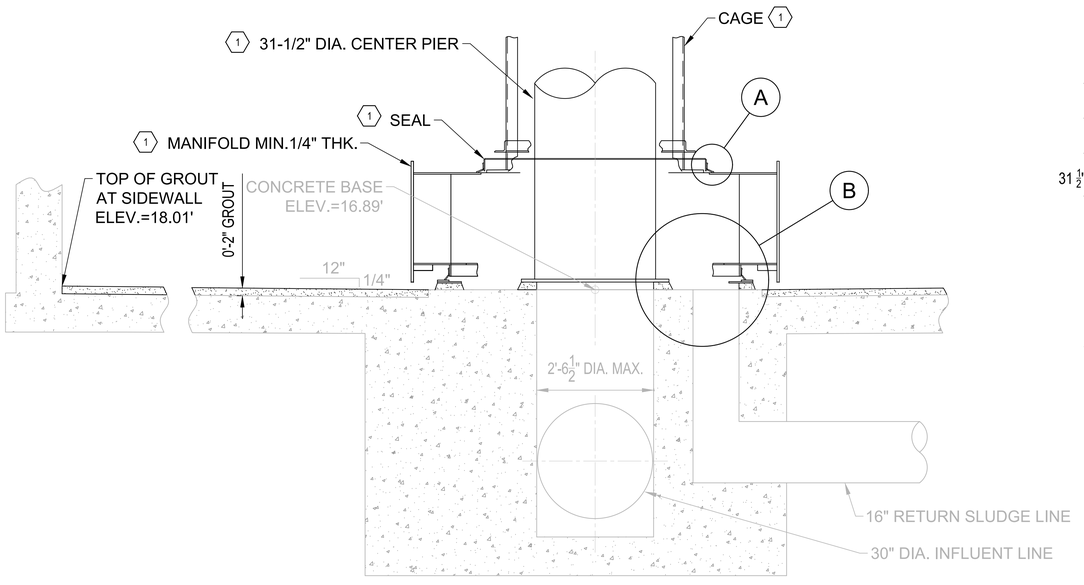
Christopher Maas 29-Jul-2026



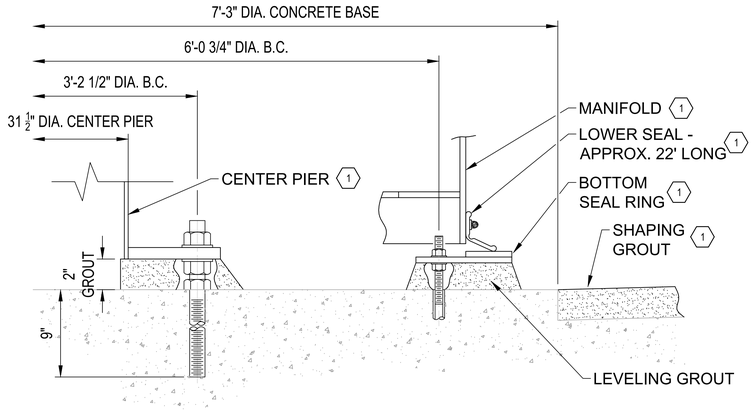
1 SECONDARY CLARIFIER CENTER PIER DEMOLITION PLAN AND DETAILS
SCALE 3/4" = 1'-0"



A ENLARGEMENT
SCALE: NOT TO SCALE



2 WEIR PLATE DETAIL
SCALE: 3/4" = 1'-0"



B ENLARGEMENT
SCALE: NOT TO SCALE

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. CONTRACTOR TO CHIP OUT SHAPING GROUT IN FLOOR TO PREP FOR INSTALLATION OF NEW GROUT.

CONSTRUCTION KEYNOTES

(#)

(1) DEMOLISH INFLUENT WELL, CENTER PIER, BOTTOM SEAL RING, FASTENERS, AND LEVELING GROUT.

SHEET LEGEND

DEMOLISH

GRAPHIC SCALE(S)

0' 1" 2" 3"
SCALE: 3/4" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

FINAL DESIGN — CD203

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER CENTER PIER
DEMOLITION PLAN AND DETAILS

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
PWO	MM/DD/YYYY	E1	XXXXX	60044660
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED	SPEC. 24-0045	SHEET 10 OF 20

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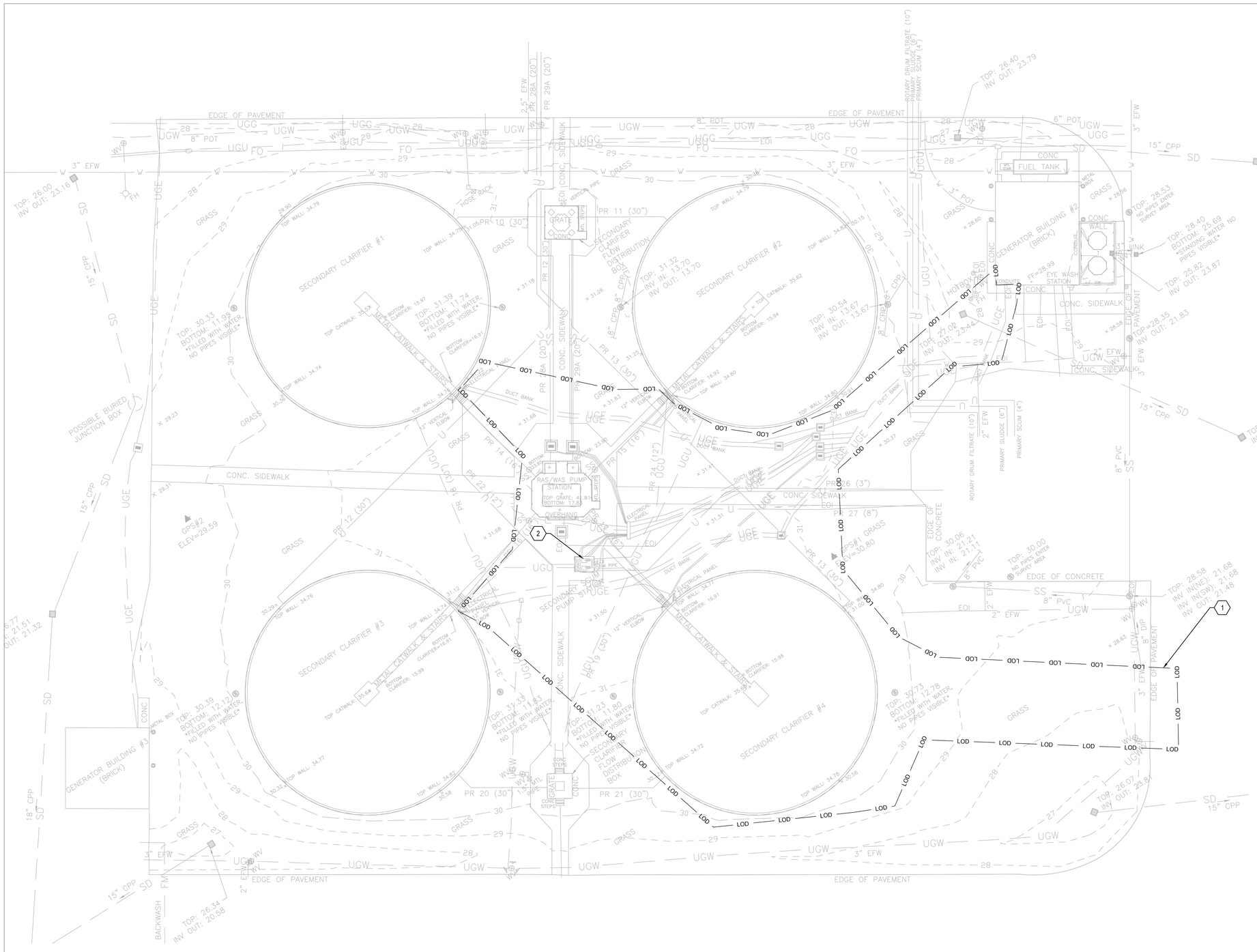
Christopher Maas 29-Jul-2026



A1 SITE PLAN
SCALE 1" = 20'

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. SEE ELECTRICAL DRAWINGS FOR LOCATIONS OF NEW ELECTRICAL CONDUIT STRUCTURES
5. CONTRACTOR MUST SOD ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS. SEE DETAIL A4/C-502 FOR SOD SCHEDULE.
6. REFER TO ELECTRICAL PLANS FOR LOCATIONS OF SIDEWALK REPLACEMENT. SEE DETAIL C3/C-502.

CONSTRUCTION KEYNOTES

(#)

(1) LIMITS OF DISTURBANCE

(2) ALL WATER DEWATERED FROM THE CLARIFIER SHOULD BE DISCHARGED INTO THE SCUM PIT. THIS INCLUDES STORMWATER AND BIOSOLIDS.

GRAPHIC SCALE(S)

0 20' 40'

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN

CS101

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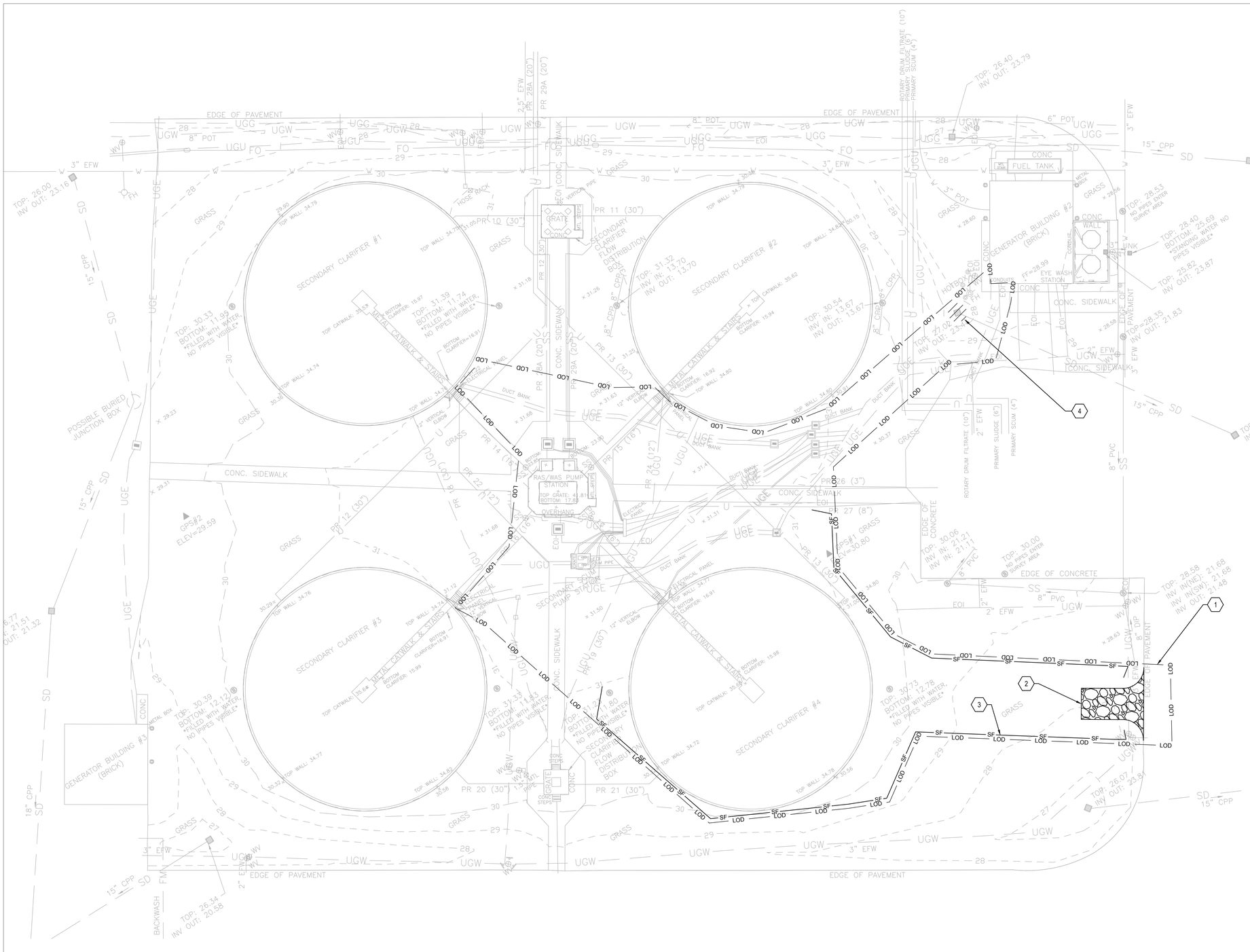
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
SITE PLAN

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044661
	CONST. CONTR. NO.	N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 11 OF 20

Christopher Maas 29-Jul-2026



A1 GRADING & EROSION CONTROL PLAN
SCALE 1" = 20'

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. LIMITS OF DISTURBANCE = 0.99 AC

CONSTRUCTION KEYNOTES

(#)

(1) LIMITS OF DISTURBANCE
(2) PROVIDE TEMPORARY CONSTRUCTION ENTRANCE. SEE SHEET A1/C-501.
(3) PROVIDE TEMPORARY SEDIMENT FENCE. SEE SHEET C1/C-501.
(4) PROVIDE TEMPORARY DROP INLET PROTECTION XX/C-50X

GRAPHIC SCALE(S)

0 20' 40'

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN **CG101**

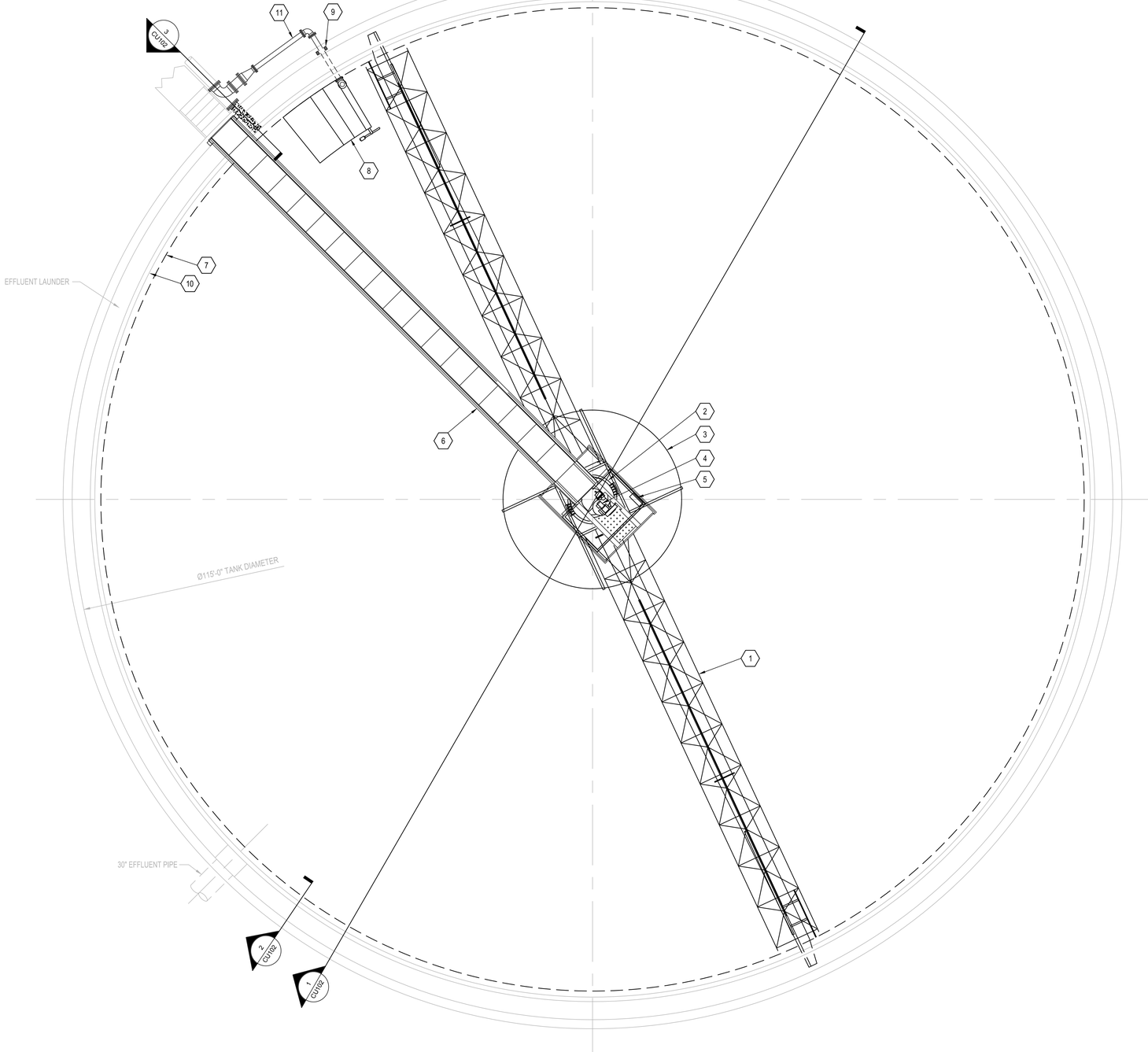
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
GRADING & EROSION CONTROL PLAN

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

SIZE	CODE IDENT,NO	NAVFAC DRAWING NO.
E1	XXXXX	60044662
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 12 OF 20

Christopher Maas 29-Jul-2026



A1 SECONDARY CLARIFIER PLAN
SCALE 3/16" = 1'-0"

PLAN NORTH

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. SEE SPECIFICATION 464321 FOR CLARIFIER INSTALLATION REQUIREMENTS.
5. FOLLOWING REPLACEMENT OF WEIR PLATE FASTENERS, THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY TO PLUMB THE ELEVATION AND DEPTH OF FLOW OVER THE WEIRS.
6. SEE SPECIFICATION 096600 FOR HIGH PERFORMANCE COATING REQUIREMENTS.

CONSTRUCTION KEYNOTES

(#)

(1) PROVIDE TOW-BRO CIRCULAR CLARIFIER WITH SLUDGE SUCTION MANIFOLD AND SCUM SKIMMER ASSEMBLIES.

(2) PROVIDE CENTER DRIVE CAGE.

(3) PROVIDE CENTER INFLUENT COLUMN.

(4) PROVIDE DRIVE UNIT.

(5) PROVIDE DRIVE UNIT CONTROL PANEL.

(6) PROVIDE ACCESS BRIDGE, STAIRS, WITH HANDRAIL AND TOEBOARD.

(7) PROVIDE FRP SCUM BAFFLE AND 316 STAINLESS STEEL SUPPORTS WITH FASTENERS.

(8) PROVIDE SCUM TROUGH WITH FLUSHING DEVICE.

(9) PROVIDE WATERTIGHT CONNECTION.

(10) PROVIDE WEIR PLATE REPLACE FASTENERS WITH 316 STAINLESS STEEL.

(11) PROVIDE 6" SCUM LINE AND APPURTENANCES TO TIE-IN TO EXISTING 12" SCUM LINE, 6" 90° BENDS, 6"X12" INCREASER, AND 12" 90° BEND (M.J. FITTINGS). CONTRACTOR TO FIELD ADJUST PIPING AS REQUIRED TO ENSURE PROPER DRAINAGE.

GRAPHIC SCALE(S)

0' 4' 8' 12'
SCALE: 3/16" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN

CU101

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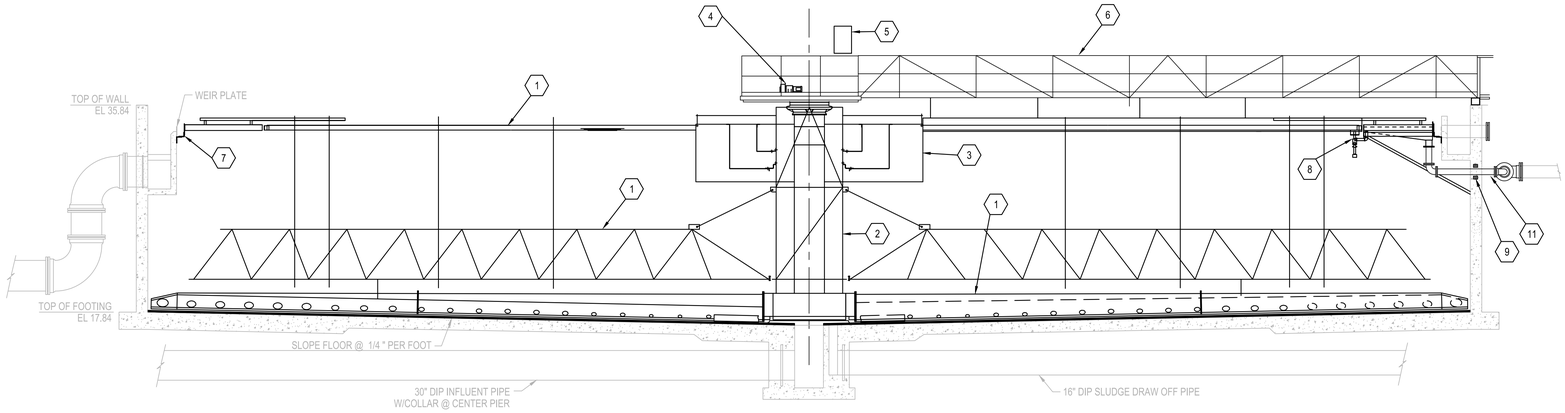
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER PLAN

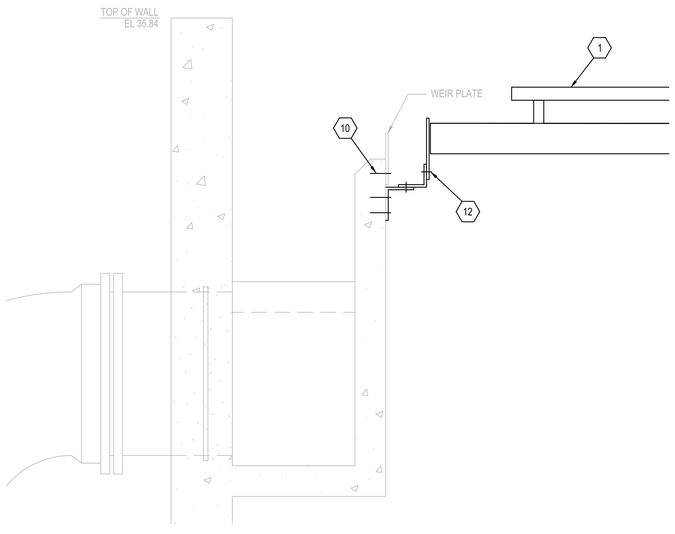
DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
PWO	MM/DD/YYYY	E1	XXXXX	60044663
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED	SPEC. 24-0045	SHEET 13 OF 20

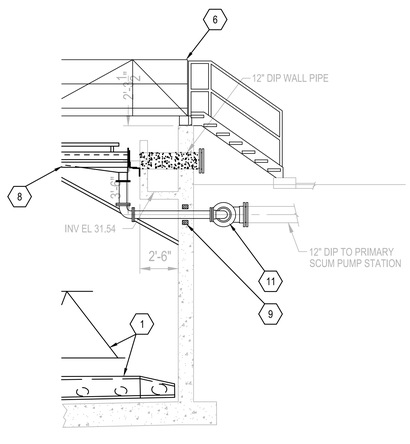
Christopher Maas 29-Jul-2026



1 SECONDARY CLARIFIER SECTION
SCALE 3/16" = 1'-0"



2 WEIR PLATE AND SCUM BAFFLE DETAIL
SCALE: 1" = 1'-0"



3 SCUM PIPE DETAIL
SCALE: 1/4" =1'-0"

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. SEE SPECIFICATION 464321 FOR CLARIFIER INSTALLATION REQUIREMENTS.
5. FOLLOWING REPLACEMENT OF WEIR PLATE FASTENERS, THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY TO PLUMB THE ELEVATION AND DEPTH OF FLOW OVER THE WEIRS.
6. SEE SPECIFICATION 096600 FOR HIGH PERFORMANCE COATING REQUIREMENTS.

CONSTRUCTION KEYNOTES

(1) PROVIDE TOW-BRO CIRCULAR CLARIFIER WITH SLUDGE SUCTION MANIFOLD AND SCUM SKIMMER ASSEMBLIES.

(2) PROVIDE CENTER DRIVE CAGE.

(3) PROVIDE CENTER INFLUENT COLUMN.

(4) PROVIDE DRIVE UNIT.

(5) PROVIDE DRIVE UNIT CONTROL PANEL.

(6) PROVIDE ACCESS BRIDGE, STAIRS, WITH HANDRAIL AND TOEBOARD.

(7) PROVIDE SCUM BAFFLE WITH 316 STAINLESS STEEL FASTENERS.

(8) PROVIDE SCUM TROUGH WITH FLUSHING DEVICE.

(9) PROVIDE WATERTIGHT CONNECTION.

(10) PROVIDE WEIR PLATE FASTENERS WITH 316 STAINLESS STEEL.

(11) PROVIDE 6" SCUM LINE AND APPURTENANCES TO TIE-IN TO EXISTING 12" SCUM LINE, 6" 90° BENDS, 6"X12" INCREASER, AND 12" 90° BEND (M.J. FITTINGS). CONTRACTOR TO FIELD ADJUST PIPING AS REQUIRED TO ENSURE PROPER DRAINAGE.

(12) PROVIDE FRP SCUM BAFFLE AND 316 STAINLESS STEEL SUPPORTS WITH FASTENERS.

GRAPHIC SCALE(S)

0' 2' 4' 8'
SCALE: 1/4" = 1' - 0"

0' 6" 1' 2'
SCALE: 1" = 1' - 0"

0' 4' 8' 12'
SCALE: 3/16" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

FINAL DESIGN

CU102

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

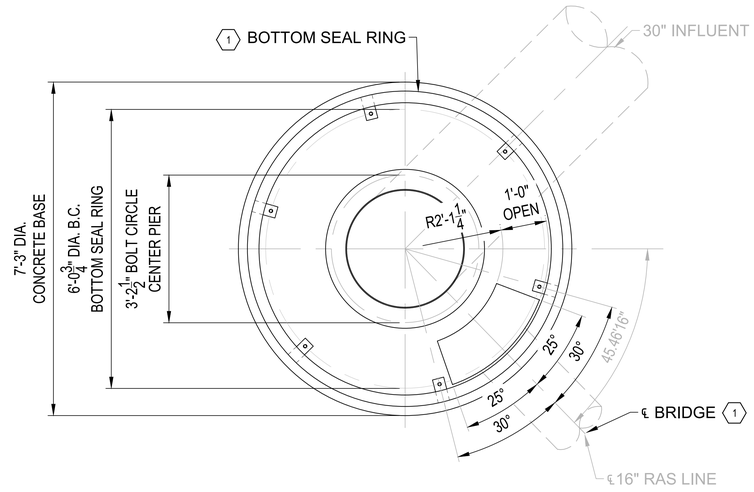
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER SECTION

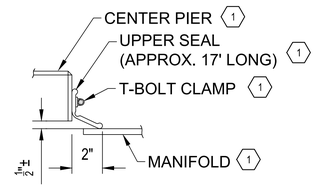
DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
PWO	MM/DD/YYYY	E1	XXXXX	60044664
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED		SPEC. 24-0045 SHEET 14 OF 20

Christopher Maas 29-Jul-2026



1 SECONDARY CLARIFIER CENTER PIER PLAN AND DETAILS
SCALE 3/4" = 1'-0"



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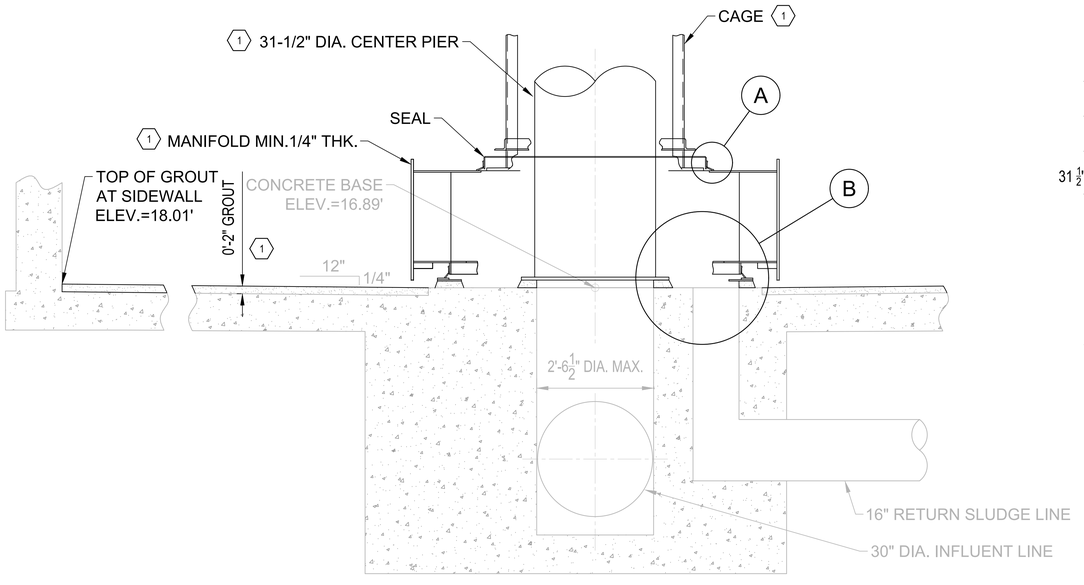
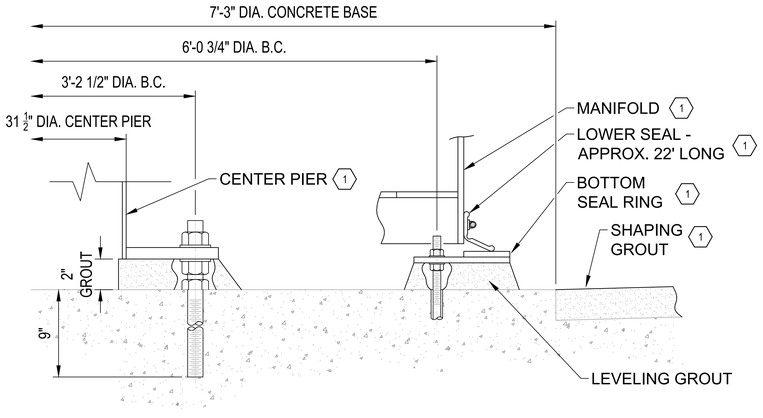
SCALE: NOT TO SCALE



2 WEIR PLATE DETAIL
SCALE: 3/4" = 1'-0"



B ENLARGEMENT
SCALE: NOT TO SCALE

SYM	REVISIONS	DATE	APPROVED

GENERAL SHEET NOTES

GENERAL NOTES:

1. SEE SHEET G-002 FOR GENERAL NOTES
2. SEE SHEET VF101 FOR SURVEY NOTES & LEGEND
3. SEE SHEET C-001 FOR CIVIL NOTES & LEGEND
4. CONTRACTOR TO CHIP OUT SHAPING GROUT IN FLOOR TO PREP FOR INSTALLATION OF NEW GROUT.

CONSTRUCTION KEYNOTES

(#)

(1) PROVIDE INFLUENT WELL, CENTER PIER, BOTTOM SEAL RING, FASTENERS, AND LEVELING GROUT PER MANUFACTURERS RECOMMENDATIONS.

GRAPHIC SCALE(S)

0' 1" 2" 3"
SCALE: 3/4" = 1' - 0"

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN **CU103**

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CAMP LEJEUNE, NORTH CAROLINA

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	

24-0045
FC436 CLARIFIER REPAIR
SECONDARY CLARIFIER CENTER PIER
PLAN AND DETAILS

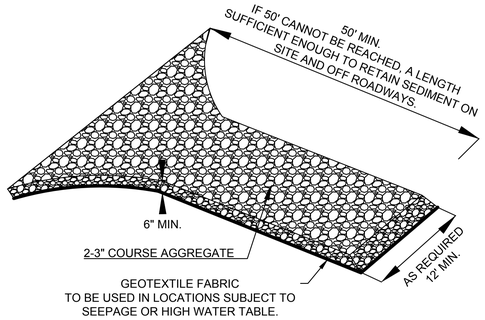
APPROVED: PWO OR OICC	DATE	SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
PWO	MM/DD/YYYY	E1	XXXXX	60044665
SATISFACTORY TO:	DATE			CONST. CONTR. NO. N40085-24-D-0011
NAME	MM/DD/YYYY	SCALE: NOTED	SPEC. 24-0045	SHEET 15 OF 20

Christopher Maas 29-Jul-2026

CONSTRUCTION SEQUENCE NOTES:

1. NO LAND DISTURBING ACTIVITIES SHALL TAKE PLACE OUTSIDE OF PROJECT LIMITS.
2. NO DEMOLITION, CONSTRUCTION, OR LAND DISTURBANCE ACTIVITIES SHALL BEGIN UNTIL ALL APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED IN LOCATIONS AS SHOWN ON THE CONTRACT DRAWINGS. IF CLEARING IS REQUIRED FOR INSTALLATION OF A GIVEN MEASURE, ALL OTHER MEASURES SHALL BE INSTALLED FIRST. THE NECESSARY LAND DISTURBANCE ACTIVITIES REQUIRED FOR INSTALLATION OF THE GIVEN MEASURE MAY THEN PROCEED.
3. UTILITIES SHOWN IN APPROXIMATE MANNER ONLY. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO DEMOLITION, CONSTRUCTION OR LAND DISTURBANCE ACTIVITIES BEGIN.
4. INSTALL CONSTRUCTION ENTRANCES, SILT FENCE, GRAVEL SILT FENCE OUTLETS, INLET PROTECTION AND WATTLES IN LOCATIONS SHOWN ON PLANS. CONTRACTOR SHALL COORDINATE LOCATION OF CONSTRUCTION ENTRANCES WITH CONTRACTING OFFICER.
5. PROVIDE TEMPORARY SEEDING TO ALL DENUDED AREAS AFTER CLEARING OPERATIONS WITHIN 7 CALENDAR DAYS. PROVIDE PERMANENT GROUNDCOVER WITHIN THE SHORTER OF 15 WORKING DAYS OR 60 CALENDAR DAYS OF ESTABLISHING FINAL GRADES.
6. PERMANENT EROSION CONTROL DEVICES SHALL BE INSTALLED WITH PERMANENT DRAINAGE FEATURES.
7. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED.
8. THE NPDES CONSTRUCTION PERMIT REQUIRES EROSION CONTROL DEVICES AND STORM WATER OUTFALLS BE INSPECTED WEEKLY (EVERY 7 CALENDAR DAYS) AND WITHIN 24 HRS OF A .5 INCH RAIN EVENT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT THESE INSPECTIONS AND MAINTAIN RECORDS UNTIL THE AREA HAS STABILIZED, EVIDENT BY 95% VEGETATIVE GROWTH FOR AREAS PROVIDED SEEDING. TO FACILITATE RAINFALL MONITORING A RAIN GAUGE IS REQUIRED TO BE ON SITE. ADDITIONALLY THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING "SELF INSPECTIONS" INDICATING THE DATE BMPS ARE INSTALLED AND STABILIZATION MEASURES (SEEDING/MULCHING OR SOD) ARE INITIATED. THE "SELF INSPECTION" REPORTS WILL BE MAINTAINED ALONG WITH THE "NPDES" INSPECTION REPORTS. ONCE STABILIZATION HAS BEEN ACCOMPLISHED INSPECTION RECORDS ARE TO BE FORWARDED TO EAD AND ALL TEMPORARY EROSION/SEDIMENTATION CONTROL DEVICES REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING COMPLIANCE WITH ALL PERMITS AND PLANS, ANY CHANGES WILL BE APPROVED BY THE STATE PRIOR TO EXECUTION. A COPY OF THE EROSION AND SEDIMENTATION CONTROL PLAN, LETTER OF APPROVAL, AND NPDES CONSTRUCTION PERMIT WILL BE MAINTAINED BY THE CONTRACTOR AT THE ONSITE OFFICE. IF SOIL IS REMOVED FROM OR BROUGHT ONSITE, THE APPLICABLE SOLID WASTE MANAGEMENT PERMIT NUMBER, EROSION SEDIMENTATION PERMIT NUMBER OR MINE PERMIT NUMBER WILL BE DISCLOSED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF SEDIMENT ON-SITE. IF THE APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES PROVE INSUFFICIENT, THE CONTRACTOR MUST TAKE THOSE ADDITIONAL STEPS NECESSARY TO STOP SEDIMENT FROM LEAVING THE SITE.
10. ANY BORROW MATERIAL BROUGHT ONTO THIS SITE SHALL BE FROM A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE. A SINGLE USE BORROW SITE OR AN AREA TO WASTE MATERIAL IS ONLY PERMISSIBLE IF IT IS OPERATED UNDER THE TOTAL CONTROL OF THE FINANCIALLY RESPONSIBLE PERSON OR FIRM WHO IS DEVELOPING THIS SITE AND HAS BEEN SEPARATELY PERMITTED AND INCORPORATED AS PART OF THIS PLAN MEETING ALL THE REQUIREMENTS OF NC GENERAL STATUTE 74-49(7)f.
11. THE CONTRACTOR SHALL COORDINATE LOCATION OF TEMPORARY STOCKPILE AREAS WITH THE CONTRACTING OFFICER. IMPACT OF TEMPORARY STORAGE OF EXCAVATED SOILS SHALL BE MINIMIZED. EXCAVATED SOILS SHALL NOT BE STORED WITHOUT PERMISSION OF THE CONTRACTING OFFICER. STOCKPILE AREAS SHALL BE DELINEATED WITH SILT FENCE AND PROVIDED TEMPORARY SEED.
12. PURSUANT TO NC GENERAL STATUTE 113A-54.1(e), THE CONTRACTOR SHALL CONDUCT 'SELF-INSPECTIONS' OF EROSION CONTROL DEVICES AT COMPLETION OF EACH CONSTRUCTION PHASE AND DOCUMENT SUCH INSPECTIONS AS OUTLINED IN 5A NCAC 04B .0131.
13. CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH ALL PERMITS AND PLANS. ANY CHANGES SHALL BE APPROVED BY THE STATE PRIOR TO EXECUTION. A COPY OF ALL PERMITS SHALL BE MAINTAINED BY THE CONTRACTOR ON-SITE AT ALL TIMES.
14. CONTRACTOR RESPONSIBLE FOR REMOVAL OF TEMPORARY EROSION CONTROL DEVICES ONCE PERMANENT GROUND COVER HAS BEEN ESTABLISHED AND APPROVED.

C1 CONSTRUCTION SEQUENCE NOTES
NTS

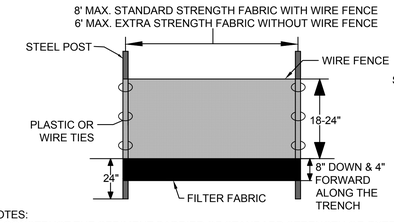


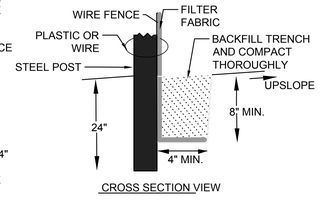
CONSTRUCTION:
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS IN ORDER TO IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

MAINTENANCE:
1. INSPECT ALL MEASURES AT LEAST WEEKLY AND AFTER EACH RAINFALL OF 1.0 INCH OR GREATER. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE.
3. SEDIMENT ON ROADWAYS IS TO BE REMOVED IMMEDIATELY BY BROOM AND SHOVEL, EITHER BY MANUAL OR MECHANICAL MEANS, AND NOT TO BE WASHED OFF WHERE IT HAS THE POTENTIAL TO ENTER A STREAM, DRAINAGE WAY OR STORM DRAIN SYSTEM.

A1 CONSTRUCTION ENTRANCE
NTS

SEDIMENT FENCE MAXIMUMS		
SLOPE	SLOPE LEN.(FT)	AREA (SF)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500



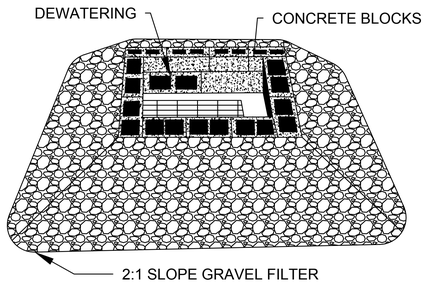


CROSS SECTION VIEW

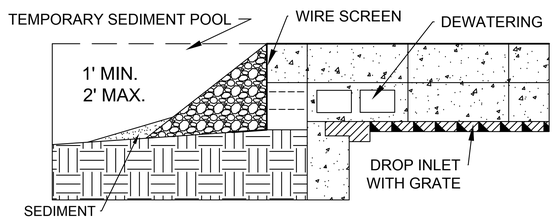
MAINTENANCE:
1. INSPECT ALL MEASURES AT LEAST WEEKLY AND AFTER EACH RAINFALL OF 1.0 INCH OR GREATER. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUTS.
4. 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.

NOTES:
1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES. WIRE MESH SHOULD BE A MINIMUM 14-GAUGE WITH 6 INCH MESH SPACING.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FOOT POST SPACING DOES NOT REQUIRE A WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM OF 50 POUND TENSILE STRENGTH.
7. EXCAVATE THE TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF THE POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.
11. DO NOT PLACE ACROSS DITCHES, STREAMS, OR ANY OTHER AREAS OF CONCENTRATED FLOW.

C1 TEMPORARY SEDIMENT FENCE
NTS



NOTES:
1. LAY ONE BLOCK, ON EACH SIDE OF THE STRUCTURE, ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2 INCH X 4 INCH WOOD STUDS THROUGH BLOCK OPENINGS.
2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL 1/2 TO 3/4 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. NCDOT #57 WASHED STONE IS RECOMMENDED.



MAINTENANCE:
1. INSPECT ALL MEASURES AT LEAST WEEKLY AND AFTER EVERY RAINFALL OF 1.0 INCH OR GREATER; REPAIR IMMEDIATELY.
2. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
3. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT BEFORE STABILIZING.

A3 BLOCK AND GRAVEL INLET PROTECTION (TEMPORARY)
NTS

SYM	REVISIONS	DATE	APPROVED

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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FINAL DESIGN — C-501

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

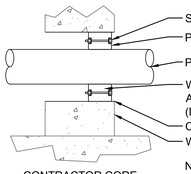
24-0045
FC436 CLARIFIER REPAIR
CIVIL DETAILS

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

SIZE E1 | CODE IDENT.NO XXXXX | NAVFAC DRAWING NO. 60044666
CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED | SPEC. XX-XXXX | SHEET 16 OF 21

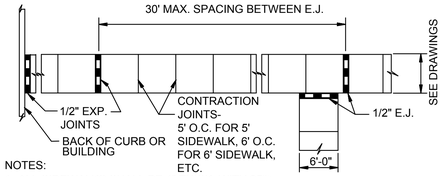
Christopher Maas 29-Jul-2026

SYM	REVISIONS	DATE	APPROVED



NOTE: PIPE AND PENETRATIONS SIZES VARY CONTRACTOR SHALL VERIFY PIPE O.D. DIA. AND SEAL SIZES PRIOR TO INSTALLATION.

C1 WATERTIGHT PIPE SEAL
NTS



NOTES:
1. ALL SIDEWALKS SHALL BE 4" THICK, WITH 95% COMPACTED SUBGRADE.
2. CONTRACTION JOINTS SHALL BE FORMED 1" DEEP AND EDGED WITH 1/8" RADIUS, OR MAY BE SAW CUT 1" DEEP.
3. 1/2" E.J. MATERIAL REQUIRED WHERE CONCRETE SIDEWALK ABUTS CONCRETE STRUCTURE AND 30' MAXIMUM SPACING.
4. A LAYER OF 15 POUND BUILDING FELT IS REQUIRED BETWEEN WALK AND ADJACENT PARALLELING CONCRETE CURB.

C3 CONCRETE SIDEWALK DETAIL
N.T.S.

1. LIME, SEED AND FERTILIZER SHALL BE APPLIED WITH NECESSARY EQUIPMENT TO GIVE UNIFORM DISTRIBUTION OF THESE MATERIALS. THE KINDS OF MATERIALS TO BE APPLIED PER ACRE:

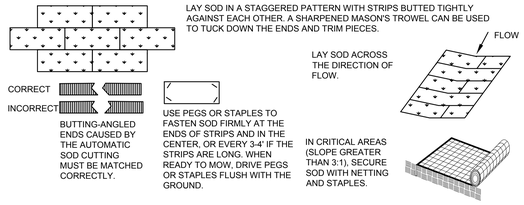
DATE	TYPE	PLANTING RATE
DEC. 1 - APR. 15	RYE (GRAIN) KOBE LESPEDEZA *	120 LBS./ACRE 50 LBS./ACRE
APR. 15 - AUG. 15	GERMAN MILLET	40 LBS./ACRE
AUG. 15 - DEC. 30	RYE (GRAIN)	120 LBS./ACRE

* OMIT KOBE LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

** QUANTITY OF FERTILIZER AND LIME SHALL BE CONFIRMED BY SOILS TEST.

2. SEEDED AREA SHALL BE CULTIPACKED TO FIRM SEEDBED AND COVER SEED.
3. GRAIN STRAW SHALL BE APPLIED OVER SEEDED AREAS AS A MULCH WITHIN 24 HOURS OF THE INITIAL SEEDING OPERATION. NO BARE GROUND SHALL BE VISIBLE WHEN RIDING BY A MULCHED AREA IF PROPER APPLICATION IS ACHIEVED. THICK CLUMPS OF STRAW ARE NOT PERMISSIBLE AS A UNIFORM COVERAGE IS EXPECTED.
4. MULCHED AREA SHALL BE TACKED WITH LIQUID ASPHALT AT A RATE OF 0.10 GALLON PER SQUARE YARD (10 GAL/1000 SQ. FT.). HYDRAULIC TACKING MATERIAL SHALL BE USED IN HIGH QUALITY WATER ZONES AND CRITICAL HABITAT AREAS.
5. DITCH TREATMENT SHALL BE USED IN AREAS WHERE STEEP GRADES COULD CAUSE DITCH EROSION. USE OF EXCELSIOR MATTING OR FIBERGLASS/SYNTHETIC ROVING IS ACCEPTABLE. DITCH TREATMENT SHALL BE INSTALLED BEFORE MULCHING OPERATION.

C4 TYPICAL SEEDING SCHEDULE IN COSTAL AREAS (TEMPORARY)
N.T.S.

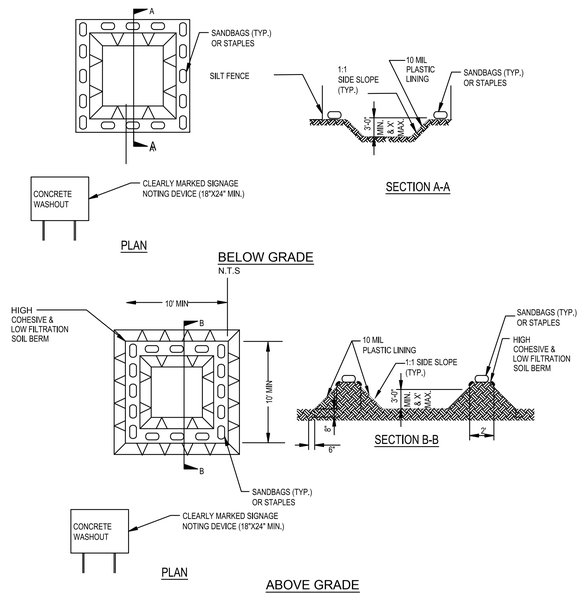


MAINTENANCE:
AFTER THE FIRST WEEK, WATER AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE IN THE ROOT ZONE AND PREVENT DORMANCY OF THE SOD. DO NOT REMOVE MORE THAN ONE-THIRD OF THE SHOOT IN ANY MOWING. GRASS HEIGHT SHOULD BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. AFTER THE FIRST GROWING SEASON, ESTABLISHED SOD REQUIRES FERTILIZATION, AND MAY ALSO REQUIRE LIME. FOLLOW SOIL TEST RECOMMENDATIONS WHEN POSSIBLE.

DATE	TYPE	PLANTING RATE	FERTILIZER ** 5-10-10 BLEND	LIMESTONE
APR. 1 - JULY 31	BERMUDA GRASS	SOLID SOD	270 LBS./ACRE	4000 LBS./ACRE
AUG. 1 - MARCH 31	CENTIPEDE GRASS	SOLID SOD	1000 LBS./ACRE	4000 LBS./ACRE

1. CONTRACTOR SHALL INSTALL SOD AS PERMANENT VEGETATION IN ALL DISTURBED AREAS NOTED.
2. MOISTENING THE SOD AFTER IT IS UNROLLED HELPS MAINTAIN ITS VIABILITY. STORE IT IN THE SHADE DURING INSTALLATION.
2. RAKE THE SOIL SURFACE TO BREAK THE CRUST JUST BEFORE LAYING SOD. DURING THE SUMMER, LIGHTLY IRRIGATE THE SOIL, IMMEDIATELY BEFORE LAYING THE SOD TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.
3. DO NOT SOD ON GRAVEL, FROZEN SOILS, OR SOILS THAT HAVE BEEN TREATED RECENTLY WITH STERILANTS OR HERBICIDES.
4. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. STAGGER STRIPS IN A BRICK-LIKE PATTERN. BE SURE THAT THE SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHTLY TO PREVENT VOIDS. USE A KNIFE OR SHARP SPADE TO TRIM AND FIT IRREGULARLY SHAPED AREAS.
5. INSTALL STRIPS OF SOD WITH THEIR LONGEST DIMENSION PERPENDICULAR TO THE SLOPE. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SECURE SOD WITH PEGS OR STAPLES.
6. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, ROLL SOD TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
7. AFTER ROLLING, IRRIGATE UNTIL THE SOIL IS WET 4 INCHES BELOW THE SOD.
8. KEEP SODDED AREAS MOIST TO A DEPTH OF 4 INCHES UNTIL THE GRASS TAKES ROOT. THIS CAN BE DETERMINED BY GENTLY TUGGING ON THE SOD-RESISTANCE INDICATES THAT ROOTING HAS OCCURRED.
9. CONTRACTOR SHALL PLAN ON WATERING 0.5 INCHES EVERY THREE DAYS WITH A MINIMUM OF 1.0 INCH PER WEEK FOR A DURATION OF MINIMUM TWO WEEKS UNTIL THE GRASS IS ESTABLISHED AND ACCEPTED BY THE CONTRACTING OFFICER.
10. MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS.

A4 TYPICAL SOD INSTALLATION DETAIL AND SCHEDULE (PERMANENT)
N.T.S.



CONCRETE WASHOUT NOTES:

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. 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.

A1 CONCRETE WASHOUT
NTS

NORTH CAROLINA PROFESSIONAL SEAL 051957 7.23.26 ENGINEER ANDREW T. ARNOLD

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C-502

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CAMP LEJEUNE, NORTH CAROLINA

24-0045
FC436 CLARIFIER REPAIR
CIVIL DETAILS

DES.	DR
DR.	MC
CHK.	AA
SUBMITTED BY:	JH
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

SIZE E1 | CODE IDENT.NO XXXXX | NAVFAC DRAWING NO. 60044667
CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED | SPEC. 24-0045 | SHEET 17 OF 20

Christopher Maas 29-Jul-2026

ELECTRICAL DEMOLITION NOTES

GENERAL: DEMOLITION DRAWINGS ARE BASED ON EXISTING PLANS AND FIELD INVESTIGATION PRIOR TO DEMOLITION. VISIT THE EXISTING BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND IN ORDER TO AVOID CONFLICTS.

DASHED ITEMS: ALL ITEMS SHOWN DASHED ON DEMOLITION PLANS ARE EXISTING AND SHALL BE REMOVED.

SOLID ITEMS: ALL ITEMS SHOWN SOLID ON DEMOLITION PLANS ARE EXISTING TO REMAIN.

CIRCUITING TO REMAIN: EXISTING CIRCUITING TO REMAIN SHALL BE REROUTED OR RECONNECTED, AS REQUIRED, WHERE AFFECTED BY NEW WORK IN ORDER TO MAINTAIN CONTINUITY OF THE CIRCUIT.

REUSE OF EXISTING CIRCUITRY: EXISTING CIRCUITRY SERVING LIGHTING FIXTURES AND/OR RECEPTACLES FOR A GIVEN AREA SHALL BE REUSED WHERE INDICATED TO SERVE THE NEW LAYOUT. PROVIDE CIRCUIT MODIFICATIONS INDICATED OR AS OTHERWISE REQUIRED TO MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT REMAIN.

EXISTING CONDUIT: ALL EXISTING CONDUITS AND WIRING THAT WILL NOT BE REUSED SHALL BE REMOVED WHERE THEY WILL BE EXPOSED UPON COMPLETION OF NEW WORK. EXISTING CONDUIT TO REMAIN CONCEALED IN WALLS SHALL BE ABANDONED. EXISTING CONDUIT TO REMAIN BELOW FLOOR SLAB SHALL BE CUT OFF ONE INCH BELOW ROUGH FLOOR AND GROUTED FLUSH. ALL EXISTING WIRING IN CONDUITS TO BE ABANDONED SHALL BE DISCONNECTED FROM POWER SOURCE AND REMOVED.

REPAIR DAMAGE: EXERCISE CARE IN REMOVAL OF DEMOLITION ITEMS. REPAIR, AT NO ADDITIONAL COST TO THE OWNER, ANY DAMAGE CAUSED TO EXISTING CONSTRUCTION AND/OR EQUIPMENT TO REMAIN.

ASSOCIATED APPURTENANCES: REMOVE ALL ELECTRICAL APPURTENANCES (DISCONNECTS, STARTERS, WIRING, CONDUIT, ETC.) ASSOCIATED WITH ITEMS TO BE REMOVED INCLUDING EQUIPMENT TO BE REMOVED BY OTHERS.

KNOCKOUT PLUGS AND COVERS: ALL CONDUIT REMOVED SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING FITTINGS, MOUNTING DEVICES, MOUNTING HARDWARE, ETC. PROVIDE CONDUIT PLUGS AND BLANKS FOR ALL OPENINGS CREATED BY THE REMOVAL OF CONDUIT. PROVIDE BLANK COVER PLATES FOR ALL OPENED OUTLET BOXES CREATED BY THE REMOVAL OF EQUIPMENT AND/OR DEVICES

DEMOLISHED MATERIALS: ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR DESIGNATED TO BE TURNED OVER TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.

SCHEDULE OUTAGES: ALL WORK AND ALL POWER OUTAGES IN THE EXISTING BUILDING SHALL BE SCHEDULED AT TIMES CONVENIENT TO THE CONTRACTING OFFICER.

NOTIFICATION: NOTIFY THE CONTRACTING OFFICER PRIOR TO TURNING OFF ANY CIRCUITS.

GENERAL ELECTRICAL NOTES

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS INCLUDING CIVIL DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE AND ADJUST ACCORDINGLY AS DIRECTED BY THE CONTRACTING OFFICER.

AS-BUILT DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK, DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE CONTRACTING OFFICER AT PROJECT CLOSE-OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #6 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE CONTRACTING OFFICER.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL SYSTEM INCLUDING EQUIPMENT FRAMES, CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS, AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL POWER CONDUITS.

LABELS: PROVIDE LABELS FOR ALL CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC, PERMANENTLY ATTACHED WITH SELF-TAPPING SCREWS OR RIVETS. DO NOT USE SELF-ADHESIVE LABELS. LABEL SHALL INDICATE EQUIPMENT DESIGNATION AND ASSOCIATED PANEL AND CIRCUIT THAT SERVES IT.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FROM OTHER INVOLVED CONTRACTORS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

CLEAN UP: ON PROJECT CLOSE-OUT CLEAN ALL AND REMOVE ALL PAINT SPATTERS FROM ELECTRICAL DEVICES. REPAIR ALL INOPERATIVE LIGHTING FIXTURES.

ELECTRICAL LEGEND

POWER

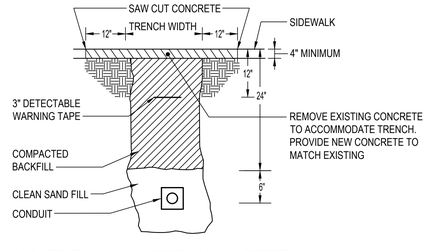
- (E) EQUIPMENT CONNECTION
- (J) CLARIFIER CONTROL PANEL IN 4X SS ENCLOSURE
- ——— ELECTRICAL CIRCUIT RUN IN CONDUIT. 4 #12, 1 #12 GND - 1" CONDUIT, UON.
- —— · —— 2" EMPTY PVC CONDUIT WITH PULLSTRING FOR CONTROL WIRING.
- ○ CONDUIT UP

GENERAL

- (1) KEY NOTE SYMBOL
- LIMITS OF DEMOLITION SYMBOL
- LIMITS OF NEW WORK SYMBOL

ABBREVIATIONS

A	AMPERE
AFG	ABOVE FINISHED GRADE
BFG	BELOW FINISHED GRADE
C	CONDUIT
ETR	EXISTING TO REMAIN
GND	GROUND
HMI	HUMAN-MACHINE INTERFACE
NTS	NOT TO SCALE
P	POLE
Ø	PHASE
PVC	POLYVINYL CHLORIDE
SCH	SCHEDULE
TYP	TYPICAL
V	VOLT



B2 TRENCH UNDER CONCRETE
NO SCALE

SYM	REVISIONS	DATE	APPROVED

KEY NOTES

NORTH CAROLINA PROFESSIONAL SEAL 053823 ENGINEER KEVEN P. MEARS

Dewberry

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DR.	BPS
CHK.	MIN
SUBMITTED BY:	XXX
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
GENERAL NOTES, LEGEND, DETAIL, AND ABBREVIATIONS

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.	
E1	XXXXX	60044668	
		CONST. CONTR. NO.	N40085-24-D-0011
SCALE: NOTED		SPEC. 24-0045	SHEET 18 OF 20

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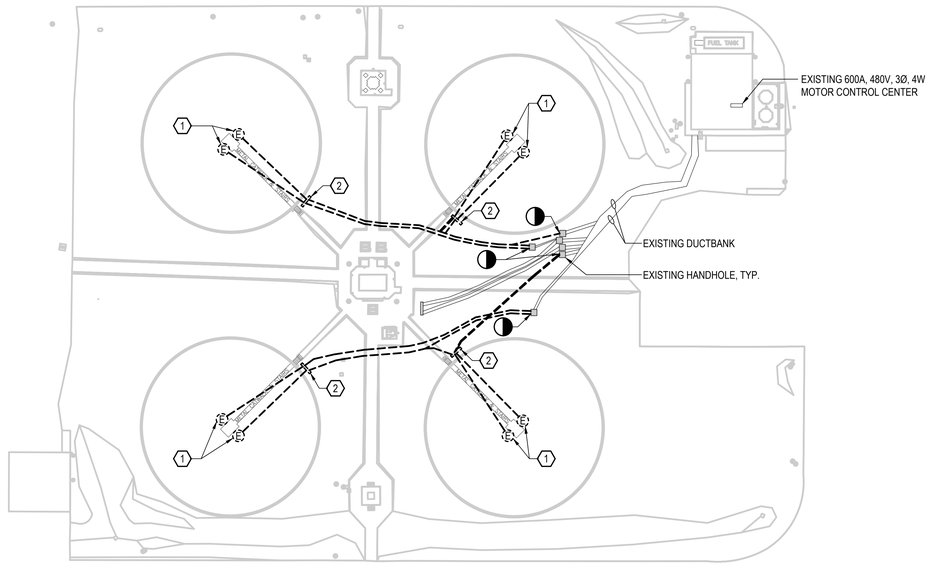

SITE PLAN - DEMOLITION
SCALE: 1" = 40'

SYM	REVISIONS	DATE	APPROVED

KEY NOTES

1. REMOVE EXISTING CONTROL PANEL, ASSOCIATED APPURTENANCES, AND CIRCUIT BACK TO SOURCE COMPLETE. RETAIN EXISTING DUCTBANK FOR REUSE IN NEW WORK WHERE INDICATED.
2. REMOVE EXISTING JUNCTION BOXES SERVING EXISTING CLARIFIER CONTROL PANELS.

GRAPHIC SCALE

1" = 40'-0" 40' 20' 0' 40' 80' 120'

NORTH CAROLINA PROFESSIONAL SEAL 053823 ENGINEER KEVIN P. MEARS

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24-0045
FC436 CLARIFIER REPAIR
SITE PLAN - DEMOLITION

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044669

CONST. CONTR. NO. N40085-24-D-0011

SCALE: NOTED | SPEC. 24-0045 | SHEET 19 OF 20

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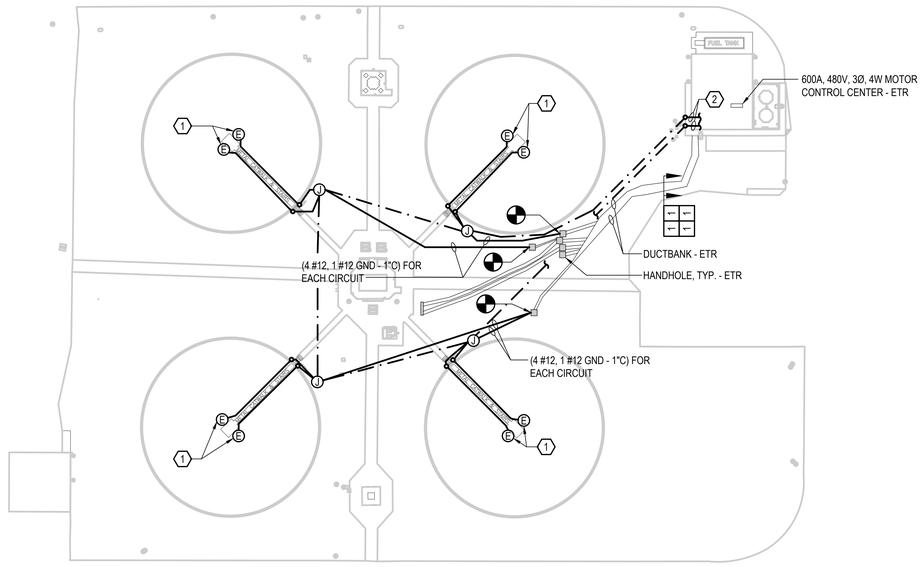

SITE PLAN - NEW WORK
SCALE: 1" = 40'-0"

DUCTBANK CABLE SCHEDULE		
DESIGNATION	DUCT SIZE (IN.)	CONDUCTORS/ DESCRIPTION
1	EXISTING	4 #12, 1 #12 GND

ENCLOSURES NOTE:
ALL BOXES AND DEVICES SHALL BE IN 4X SS ENCLOSURES.

CONDUIT NOTE:
ALL UNDERGROUND CONDUITS SHALL BE PVC.

SYM	REVISIONS	DATE	APPROVED

KEY NOTES

1. CLARIFIER CONNECTION, 480V, 3Ø. CONNECT TO EXISTING 20A-3P BREAKER MADE SPARE DURING DEMOLITION IN MOTOR CONTROL CENTER.
2. COORDINATE EXACT LOCATION OF CONTROLS CONDUIT TERMINATION WITH CONTROLS CABINET INDICATED ON CIVIL DRAWINGS. CONDUITS SHALL STUB UP AT EXTERIOR WALL AND LB INTO BUILDING 8" AFG.

GRAPHIC SCALE

1" = 40'-0" (40' 20' 0' 40' 80' 120')

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 053623 STEVEN P MEARS

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FINAL DESIGN | **E-101**

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PWO	MM/DD/YYYY
SATISFACTORY TO:	DATE
NAME	MM/DD/YYYY

24-0045
FC436 CLARIFIER REPAIR
SITE PLAN - NEW WORK

SIZE	CODE IDENT.NO	NAVFAC DRAWING NO.
E1	XXXXX	60044670
		CONST. CONTR. NO. N40085-24-D-0011
SCALE: NOTED	SPEC. 24-0045	SHEET 20 OF 20

Christopher Maas 29-Jul-2026