A. STANDARD AUTOMOBILES

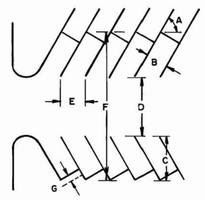
A	B	C	D	D'	E	F	F'	G
0°	8.0'	N/A	12.0'	20.0'	23.0'	28.0'	36.0'	N/A
45°	8.5'	18.0'	13.0'	20.0'	12.0'	49.0'	56.0'	2.0'
60°	8.5'	19.5'	16.0'	20.0'	9.8'	55.0'	59.0'	2.5'
75°	8.5'	19.8'	20.0'	20.0'	8.8'	59.6'	59.6'	3.0'
90°	8.5'	18.5'	25.0'	25.0'	8.5'	62.0'	62.0'	3.0'

B. COMPACT AUTOMOBILES

A	B	C	D	D'	E	F	F'	G
0°	8.0'	N/A	11.0'	20.0'	19.0'	27.0'	36.0'	N/A
45°	8.0'	15.3'	11.5'	20.0'	11.3'	42.1'	50.6'	1.5'
60°	8.0'	16.3'	13.3'	20.0'	9.2'	45.9'	52.6'	1.8'
75°	8.0'	16.5'	16.0'	20.0'	8.2'	49.0'	53.0'	2.0'
90°	8.0'	15.5'	20.0'	20.0'	8.0'	51.0'	51.0'	2.0'

*ADDITIONAL WIDTH MAY BE REQUIRED WHERE THE AISLE SERVES AS A PRINCIPAL VEHICULAR ACCESS TO ON-SITE USES OR STRUCTURES OR SERVES TWO-WAY TRAFFIC.

PARKING STALLS ABUTTING SIDEWALK AND PLANTING STRIPS SHALL PROVIDE ADDITIONAL CLEARANCE BETWEEN THE STALL AND THE SIDEWALK OR PLANTING STRIP.



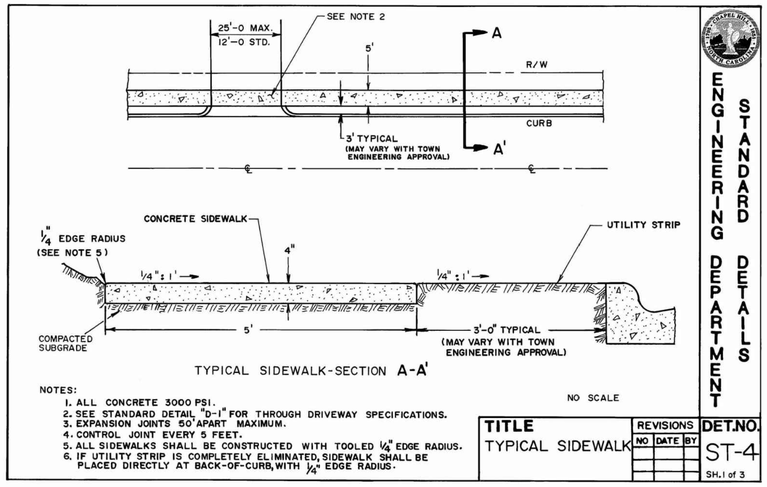
A) PARKING ANGLE
B) STALL WIDTH
C) STALL DEPTH
*D) AISLE WIDTH BETWEEN STALL LINES (ONE-WAY TRAFFIC)
E) STALL WIDTH PARALLEL TO AISLE
F) MODULE WIDTH (ONE-WAY TRAFFIC) WITH PARKING ON BOTH SIDES.
#G) VECHICLE OVERHANG
*D') TWO-WAY TRAFFIC
F') TWO-WAY TRAFFIC

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE LOT LAYOUT SCHEDULE

REVISIONS		
NO	DATE	BY

DET.NO P-1



TYPICAL SIDEWALK-SECTION A-A'

NO SCALE

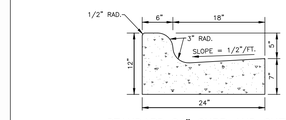
NOTES:
1. ALL CONCRETE 3000 PSI.
2. SEE STANDARD DETAIL "D-1" FOR THROUGH DRIVEWAY SPECIFICATIONS.
3. EXPANSION JOINTS 50' APART MAXIMUM.
4. CONTROL JOINT EVERY 5 FEET.
5. ALL SIDEWALKS SHALL BE CONSTRUCTED WITH TOOLED 1/4" EDGE RADIUS.
6. IF UTILITY STRIP IS COMPLETELY ELIMINATED, SIDEWALK SHALL BE PLACED DIRECTLY AT BACK-OF-CURB, WITH 1/4" EDGE RADIUS.

ENGINEERING DEPARTMENT STANDARD DETAILS

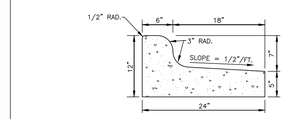
TITLE TYPICAL SIDEWALK

REVISIONS		
NO	DATE	BY

DET.NO. ST-4
SH.1 of 3



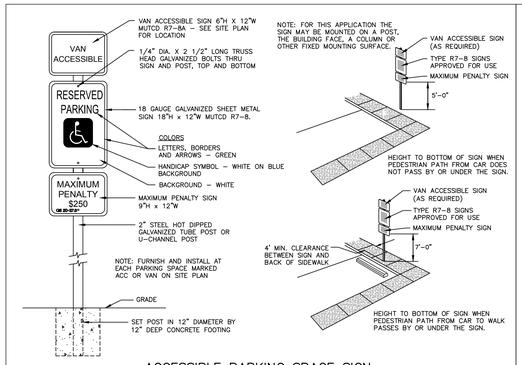
STANDARD 24" CURB AND GUTTER



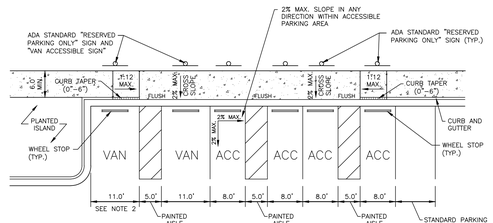
24" SPILL CURB AND GUTTER

NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF THE NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

24" CURB AND GUTTER
N.T.S.



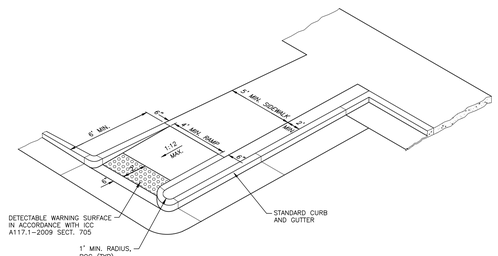
ACCESSIBLE PARKING SPACE SIGN
N.T.S.



LEGEND:
"VAN" = VAN ACCESSIBLE SPACE
"ACC" = STANDARD ACCESSIBLE SPACE

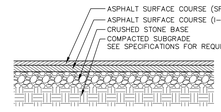
NOTES:
1. CURB AND GUTTER, WALK AND RAMP TO BE PLACED SEPARATELY.
2. ACCESSIBLE PARKING SPACE WIDTH TO BE MEASURED FROM THE EDGE OF PAVEMENT WHERE CURB AND GUTTER IS ADJACENT TO THE ACCESSIBLE SPACE.
3. ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE-GROUND SIGNS ONLY.
4. STRIPING IS WHITE ON DARK PAVEMENT AND BLACK ON LIGHT PAVEMENT.
5. VAN ACCESSIBLE SPACES TO BE 11.0' MINIMUM WIDTH.

TYPICAL ACCESSIBLE PARKING SPACE LAYOUT, RAMP AND SIGN LOCATIONS
N.T.S.



CURB RETURN ACCESSIBLE RAMP
N.T.S.

NOTE:
THE PAVEMENT SECTIONS SHOWN ARE PRELIMINARY. THE CONTRACTOR SHALL VERIFY PAVEMENT DESIGN WITH THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.



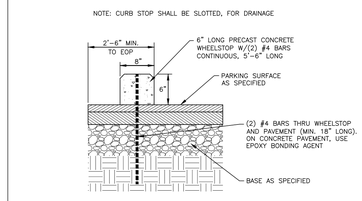
SUBGRADE COMPACTED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698) REFER TO SOILS REPORT IF AVAILABLE.

ON-SITE ASPHALT HEAVY DUTY TRAFFIC PAVEMENT DETAIL
N.T.S.

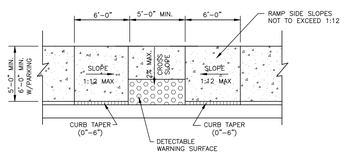
NOTE:
THE PAVEMENT SECTIONS SHOWN ARE PRELIMINARY. THE CONTRACTOR SHALL VERIFY PAVEMENT DESIGN WITH THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

SUBGRADE COMPACTED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698) REFER TO SOILS REPORT IF AVAILABLE.

ON-SITE ASPHALT PARKING PAVEMENT DETAIL
N.T.S.

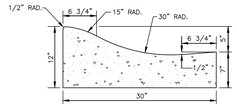


WHEEL STOP
N.T.S.



NOTE: RAMP LANDING AREA SHALL RECEIVE A 24" DETECTABLE WARNING SURFACE OF COLOR TO CONTRAST WITH ADJOINING SURFACES PER ICC A117.1-2009 SECT. 705 REQUIREMENTS.

ACCESSIBLE SIDEWALK RAMP
N.T.S.



NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF THE NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

30" ROLLED CURB AND GUTTER
N.T.S.

McADAMS
The John R. McAdams Company, Inc.
621 Hillsborough Street
Suite 500
Raleigh, NC 27603
phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187
www.mcadamsco.com

CLIENT
UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL
DEPARTMENT OF ATHLETICS
220 FINLEY GOLF COURSE ROAD
CHAPEL HILL, NORTH CAROLINA 27517

UNC CHAPEL HILL-GOLF TRAINING FACILITY
SPECIAL USE PERMIT
500 FINLEY GOLF COURSE ROAD
CHAPEL HILL, NC 27514

NORTH CAROLINA PROFESSIONAL SEAL 054445 ENGINEER KENNARD S. TROMBLEE
NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE

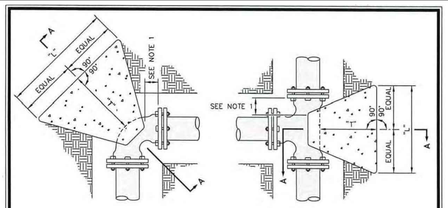
PLAN INFORMATION

PROJECT NO.	UNC-22005
FILENAME	UNC22005-D1
CHECKED BY	KST
DRAWN BY	SME
SCALE	N/A
DATE	04.19.2024

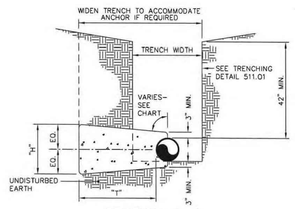
SHEET
SITE DETAILS
C8.00

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\UNC\UNC22005\Active\Civil Engineering\Construction Drawings\Current Drawings\UNC22005-D1.dwg, 4/19/2024 10:09:18 AM, Kody Trowbridge



FOR ALL BEND FITTINGS FOR TEE FITTING



SECTION A–A

NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL # ≥512.02 | REVISION DATE: August 15, 2003 | SHEET # 1 of 4

TEST PRESSURE = 150 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T"	VOLUME CONCRETE CU. YD.
<4 INCHES	11 1/4°	---	---	---	---
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.00	1.00	2.50	0.09
	TEE / PLUG	1.00	1.00	2.00	0.07
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.00	1.00	2.50	0.09
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.00	2.00	3.00	0.28
	TEE / PLUG	2.00	2.00	2.50	0.23
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.75	0.25
	90°	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	2.00	2.00	3.00	0.28
	45°	3.00	2.50	3.00	0.47
	90°	4.50	3.00	3.50	0.94
	TEE / PLUG	4.50	3.00	3.00	0.81
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	3.00	3.50	0.84
	90°	6.50	3.50	3.50	1.54
	TEE / PLUG	6.50	3.50	3.00	1.32

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL # ≥512.02 | REVISION DATE: August 15, 2003 | SHEET # 2 of 4

TEST PRESSURE = 200 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T"	VOLUME CONCRETE CU. YD.
<4 INCHES	11 1/4°	1.00	1.00	1.00	0.04
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.50	1.50	2.50	0.15
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.50	2.00	3.00	0.33
	TEE / PLUG	2.50	2.00	2.50	0.28
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.50	0.23
	90°	4.00	2.00	3.00	0.50
	TEE / PLUG	4.00	2.00	2.50	0.42
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	2.50	3.00	0.61
	90°	5.50	3.00	3.50	1.13
	TEE / PLUG	5.50	3.00	3.00	0.97
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	4.00	2.00	3.00	0.50
	45°	5.50	3.00	3.50	1.13
	90°	7.50	4.00	3.50	2.01
	TEE / PLUG	7.50	4.00	3.00	1.72

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL # ≥512.02 | REVISION DATE: August 15, 2003 | SHEET # 3 of 4

TEST PRESSURE = 250 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T"	VOLUME CONCRETE CU. YD.
<4 INCHES	11 1/4°	1.00	1.00	1.00	0.04
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.50	1.50	2.50	0.15
	90°	2.00	2.00	2.50	0.23
	TEE / PLUG	2.00	2.00	2.00	0.19
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	2.00	1.50	2.50	0.19
	90°	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.50	2.00	2.50	0.28
	90°	4.00	2.50	3.00	0.61
	TEE / PLUG	4.00	2.50	2.50	0.51
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.50	2.00	3.00	0.44
	45°	4.50	2.75	3.00	0.74
	90°	6.00	3.50	3.50	1.43
	TEE / PLUG	6.00	3.50	3.00	1.22
16 INCHES	11 1/4°	2.50	2.00	3.00	0.33
	22 1/2°	4.00	2.50	3.00	0.61
	45°	6.00	3.50	3.50	1.43
	90°	8.00	4.50	4.00	2.74
	TEE / PLUG	8.00	4.50	3.50	2.40

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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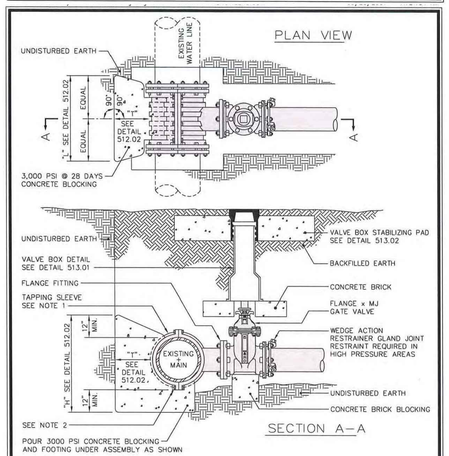
BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL # ≥512.02 | REVISION DATE: August 15, 2003 | SHEET # 4 of 4



SECTION A–A

NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Taps onto in-service mains by OWASA personnel only.

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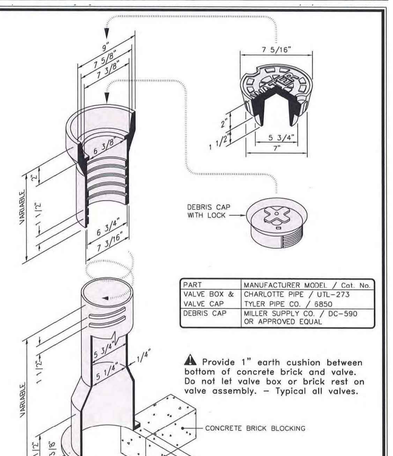
4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

SCALE: Not To Scale | DETAIL # ≥512.04 | REVISION DATE: August 15, 2003 | SHEET # 1 of 1



PART	MANUFACTURER MODEL / Cat. No.
VALVE BOX & VALVE CAP	CHARLOTTE PIPE / UTL-273
VALVE CAP	TYLER PIPE CO. / 6850
DEBRIS CAP	MILLER SUPPLY CO. / DC-590 OR APPROVED EQUAL

⚠ Provide 1" earth cushion between bottom of concrete brick and valve. Do not let valve box or brick rest on valve assembly. – Typical all valves.

NOTES:
1. Use heavy duty traffic lid marked "WATER".

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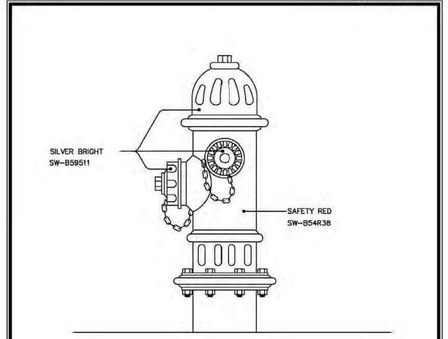
STANDARD SCREW VALVE BOX DETAIL

SCALE: Not To Scale | DETAIL # ≥513.01 | REVISION DATE: August 15, 2003 | SHEET # 1 of 1



NOTES:
1. Use sherwin-williams industrial enamel or equal.
2. Paint colors are applicable to the following locations:
   a. Town of Carrboro
   b. Town of Chapel Hill
   c. Durham County
   d. Orange County
   e. University of North Carolina

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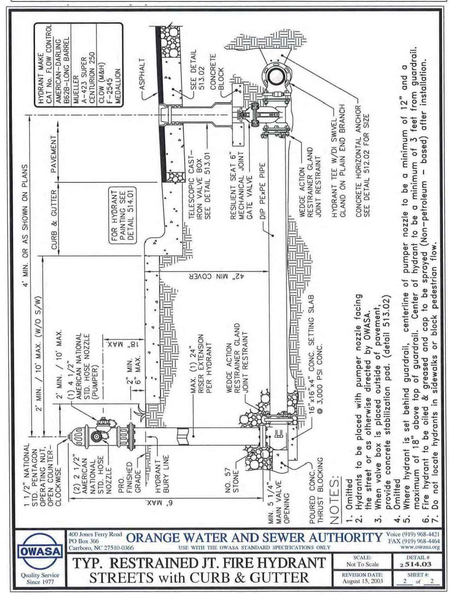
FIRE HYDRANT PAINTING SPECIFICATIONS

SCALE: Not To Scale | DETAIL # ≥514.01 | REVISION DATE: August 27, 2010 | SHEET # 1 of 1



NOTES:
1. Omitted
2. Hydrants to be placed with pumper nozzle facing the street and no more than 15° from perpendicular.
3. When valve box is placed outside of pavement, provide concrete stabilization pad. (detail 513.02)
4. Where hydrant is set behind guardrail, centerline of pumper nozzle to be a minimum of 12" and a maximum of 18" above top of guardrail. Center of hydrant to be a minimum of 3 feet from guardrail.
5. Where hydrant is set behind curb & gutter, centerline of pumper nozzle to be a minimum of 18" and a maximum of 24" above top of curb & gutter.
6. Do not locate hydrants in sidewalks or block pedestrian flow.

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TYP. RESTRAINED JT. FIRE HYDRANT STREETS with CURB & GUTTER

SCALE: Not To Scale | DETAIL # ≥514.03 | REVISION DATE: August 15, 2003 | SHEET # 2 of 2

TYPICAL BOX

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STANDARD 2" METER VAULT

SCALE: Not To Scale | DETAIL # ≥515.04 | REVISION DATE: December, 2010 | SHEET # 1 of 3

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STANDARD 2" METER VAULT

SCALE: Not To Scale | DETAIL # ≥515.04 | REVISION DATE: December, 2010 | SHEET # 2 of 3

	PART	MANUFACTURER MODEL / Cat. No.
1	2" COMPOUND METER	FURNISHED BY OWASA
2	2" METER SETTER	(2") FORD STD. 18" RISE VBHH77-18BHC-11-77 MUELLER 15" RISE MUELLER DWG No. B2423-2
3	2" TYPE "K" HARD DRAWN COPPER SERVICE	---
4	4' x 5' PRECAST CONCRETE METER VAULT	See Section 02510 2.3.6 (OR APPROVED EQUIVALENT)
5	ACCESS HATCH NO EXPOSED HINGES OR LOCKS	See Section 02510 2.3.13
6	SILVER BRAZED JOINT	See Section 02510 2.1.2

NOTES:
1. Ensure positive surface grade away from vault.

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STANDARD 2" METER VAULT

SCALE: Not To Scale | DETAIL # ≥515.04 | REVISION DATE: December, 2010 | SHEET # 3 of 3

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220 FINLEY GOLF COURSE ROAD
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SPECIAL USE PERMIT
500 FINLEY GOLF COURSE ROAD
CHAPEL HILL, NC 27514

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 054445 EDWARD S. TRIMBLE
NOT FOR CONSTRUCTION

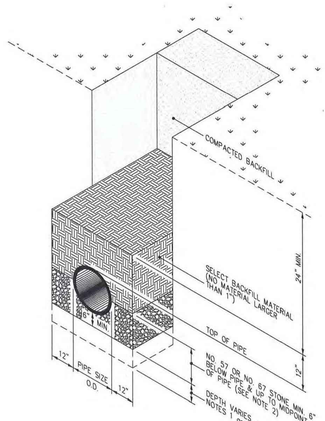
REVISIONS
NO. DATE

PLAN INFORMATION
PROJECT NO. UNC-22005
FILENAME UNC22005-D1
CHECKED BY KST
DRAWN BY SME
SCALE N/A
DATE 04.19.2024

SHEET
WATER DETAILS
C8.01

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\UNC\UNC2005\04-Production\Engineering\Construction Drawings\Current Drawings\UNC2005-D1.dwg, 4/19/2024 10:09:30 AM, Kody Trowbridge



NOTES:

1. Foundation stone shall be required when soil conditions are unsuitable.
2. An additional 1 inch depth of cushioning material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12 inches of cushioning material.

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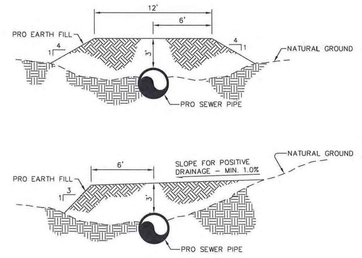
SANITARY SEWER BEDDING DETAIL

SCALE: Not To Scale	DETAIL #: ₂S31.01
REVISION DATE: August 15, 2003	SHEET #: 1 of 1



NOTES:

1. Sewer pipe to be bedded and backfilled in accordance with detail 531.01 and specification Section 02530, Part 3, Execution.
2. 4" top soil to be placed over earthfill and seeded in accordance with standard specifications.
3. Ground is to be graded for proper drainage.

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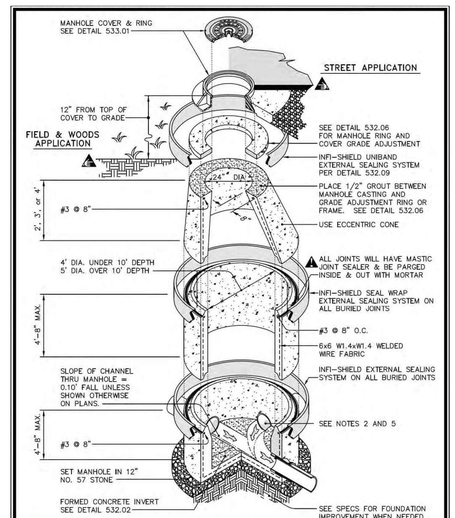
EARTH FILL OVER SEWER PIPE DETAIL

SCALE: Not To Scale	DETAIL #: ₂S31.02
REVISION DATE: August 15, 2003	SHEET #: 1 of 1



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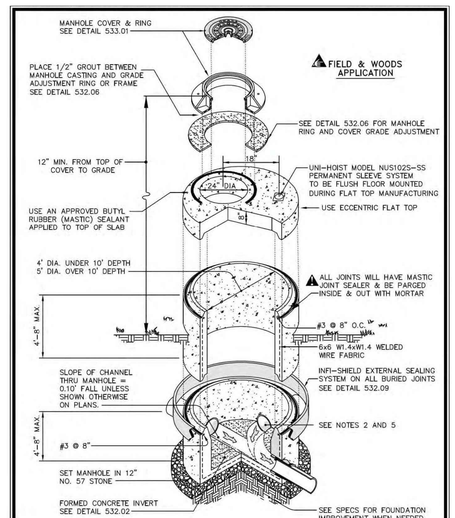
STANDARD ECCENTRIC CONE MANHOLE DETAIL

SCALE: Not To Scale	DETAIL #: ₂S32.01
REVISION DATE: April 13, 2007	SHEET #: 1 of 3



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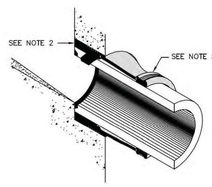
STANDARD ECCENTRIC FLAT TOP MANHOLE DETAIL

SCALE: Not To Scale	DETAIL #: ₂S32.01
REVISION DATE: MAY 21, 2013	SHEET #: 1 of 3

PART	MANUFACTURER MODEL / Cat. No.
SLEEVE BOOTS	KOR-N-SEAL or PSX



NOTES:

1. Concrete strength to be 4,000 PSI minimum.
2. Pipes will be grouted inside and out.
3. Joints will have mastic joint sealer and be parged inside and out with mortar.
4. Reinforcement design to conform to the requirements of ASTM C478.
5. Flexible sleeve boots cast in place or installed with stainless steel expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands. Precast inverts will not be accepted, unless otherwise directed by OWASA's inspectors.

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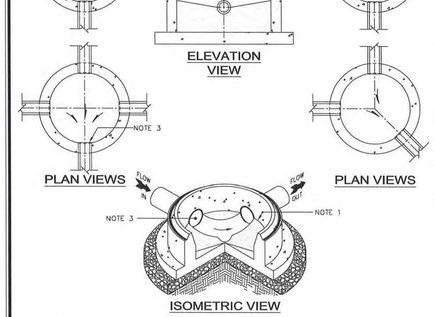
STANDARD ECCENTRIC MANHOLE DETAIL

SCALE: Not To Scale	DETAIL #: ₂S32.01
REVISION DATE: April 13, 2007	SHEET #: 3 of 3



NOTES:

1. Concrete benches must be sloped away from the manhole wall beginning in line with the top of the pipe and sloped down to the spring-line of the pipe invert.
2. Service line entries to have cast in place troughs.
3. Radius of invert must have enough room to be able to insert air plugs and TV equipment.

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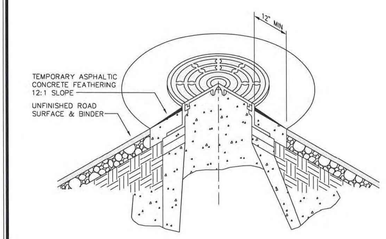
STANDARD SEWER INVERT PLANS FOR MANHOLE

SCALE: Not To Scale	DETAIL #: ₂S32.02
REVISION DATE: March 11, 2005	SHEET #: 1 of 1



NOTES:

1. When the rim & cover of a manhole or a valve box extends more than 1" above an unfinished road surface, a temporary layer of asphaltic concrete feathering shall be required to provide a smooth transition from 1" below the edge of the rim & cover to the unfinished road surface. A 12 to 1 slope ratio shall be used. The exposed sides of the valve box and/or manhole cover shall be painted bright orange or as specified by OWASA inspector.
2. Prior to final paving contractor shall remove feathering, completely, & apply asphalt tack coat to binder to insure proper asphalt adhesion.

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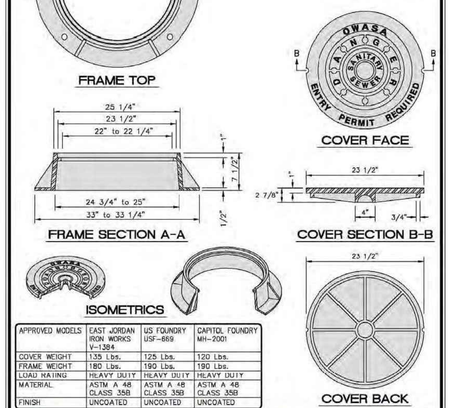
STRUCTURE PROTECTION UNFINISHED ROAD GRADE

SCALE: Not To Scale	DETAIL #: ₂S32.07
REVISION DATE: August 15, 2003	SHEET #: 1 of 1



APPROVED MODELS	EAST JORDAN IRON WORKS V-1384	US FOUNDRY USF-669	CAPITOL FOUNDRY MH-2001
COVER WEIGHT	135 Lbs.	125 Lbs.	120 Lbs.
FRAME WEIGHT	180 Lbs.	190 Lbs.	190 Lbs.
LOAD RATING	HEAVY DUTY	HEAVY DUTY	HEAVY DUTY
MATERIAL	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B
FINISH	UNCOATED	UNCOATED	UNCOATED

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SANITARY SEWER MANHOLE FRAME and COVER

SCALE: Not To Scale	DETAIL #: ₂S33.01
REVISION DATE: February 20, 2013	SHEET #: 1 of 1

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NORTH CAROLINA PROFESSIONAL SEAL 054445 ENGINEER KENNARD S. TROMBLETON NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE

PLAN INFORMATION

PROJECT NO.	UNC-22005
FILENAME	UNC22005-D1
CHECKED BY	KST
DRAWN BY	SME
SCALE	N/A
DATE	04.19.2024

SHEET

SANITARY SEWER DETAILS

C8.02

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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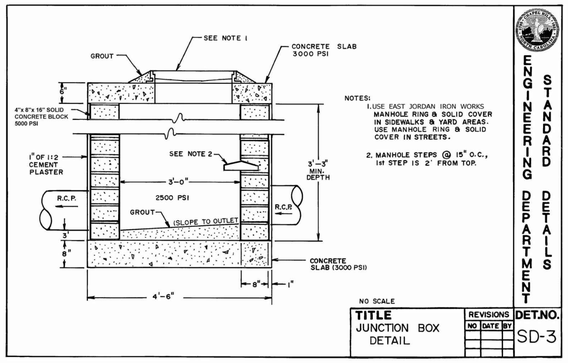
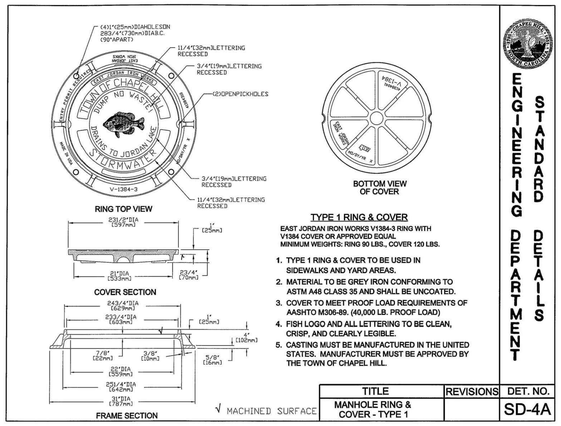


TITLE	REVISIONS	DET.NO.
JUNCTION BOX DETAIL	NO DATE BY	SD-3

ENGINEERING DEPARTMENT STANDARD DETAILS



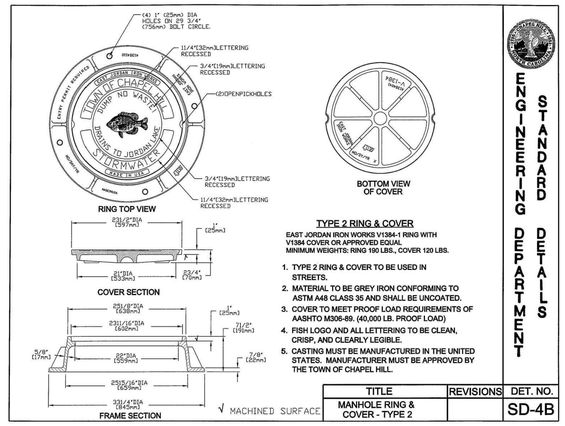
TYPE 1 RING & COVER

EAST JORDAN IRON WORKS V1384-3 RING WITH V1384 COVER OR APPROVED EQUAL.
MINIMUM WEIGHTS: RING 90 LBS., COVER 120 LBS.

1. TYPE 1 RING & COVER TO BE USED IN SIDEWALKS AND YARD AREAS.
2. MATERIAL TO BE GREY IRON CONFORMING TO ASTM A48 CLASS 35 AND SHALL BE UNCOATED.
3. COVER TO MEET PROOF LOAD REQUIREMENTS OF AASHTO M306-89. (40,000 LB. PROOF LOAD)
4. FISH LOGO AND ALL LETTERING TO BE CLEAN, CRISP, AND CLEARLY LEGIBLE.
5. CASTING MUST BE MANUFACTURED IN THE UNITED STATES. MANUFACTURER MUST BE APPROVED BY THE TOWN OF CHAPEL HILL.

TITLE	REVISIONS	DET. NO.
MANHOLE RING & COVER - TYPE 1		SD-4A

ENGINEERING DEPARTMENT STANDARD DETAILS



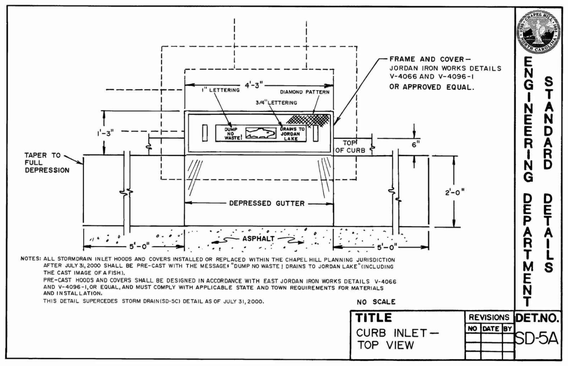
TYPE 2 RING & COVER

EAST JORDAN IRON WORKS V1384-1 RING WITH V1384 COVER OR APPROVED EQUAL.
MINIMUM WEIGHTS: RING 190 LBS., COVER 120 LBS.

1. TYPE 2 RING & COVER TO BE USED IN STREETS.
2. MATERIAL TO BE GREY IRON CONFORMING TO ASTM A48 CLASS 35 AND SHALL BE UNCOATED.
3. COVER TO MEET PROOF LOAD REQUIREMENTS OF AASHTO M306-89. (40,000 LB. PROOF LOAD)
4. FISH LOGO AND ALL LETTERING TO BE CLEAN, CRISP, AND CLEARLY LEGIBLE.
5. CASTING MUST BE MANUFACTURED IN THE UNITED STATES. MANUFACTURER MUST BE APPROVED BY THE TOWN OF CHAPEL HILL.

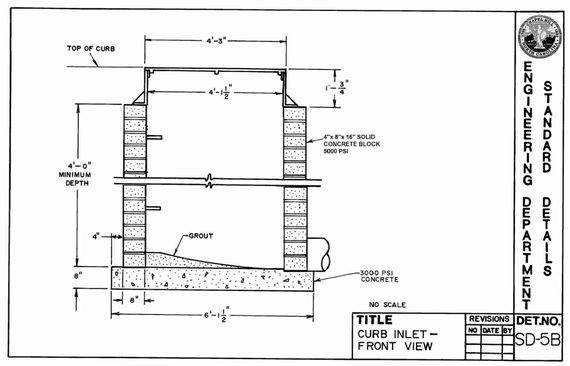
TITLE	REVISIONS	DET. NO.
MANHOLE RING & COVER - TYPE 2		SD-4B

ENGINEERING DEPARTMENT STANDARD DETAILS



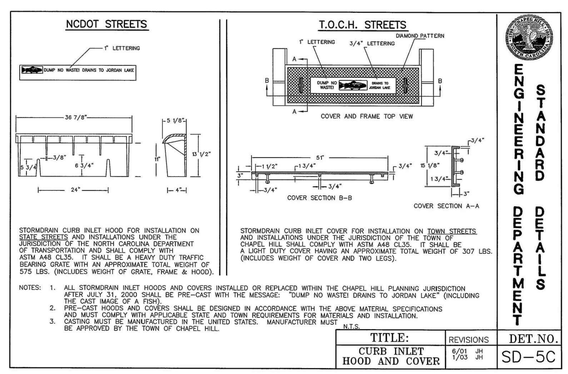
TITLE	REVISIONS	DET.NO.
CURB INLET— TOP VIEW	NO DATE BY	SD-5A

ENGINEERING DEPARTMENT STANDARD DETAILS



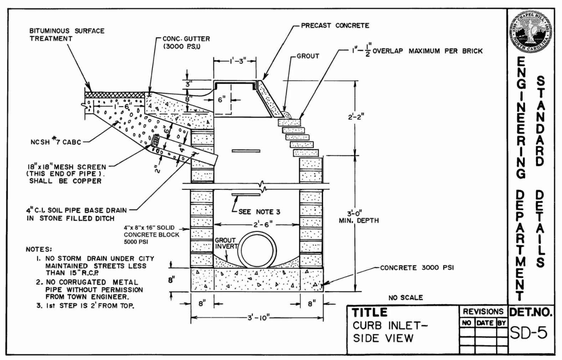
TITLE	REVISIONS	DET.NO.
CURB INLET— FRONT VIEW	NO DATE BY	SD-5B

ENGINEERING DEPARTMENT STANDARD DETAILS



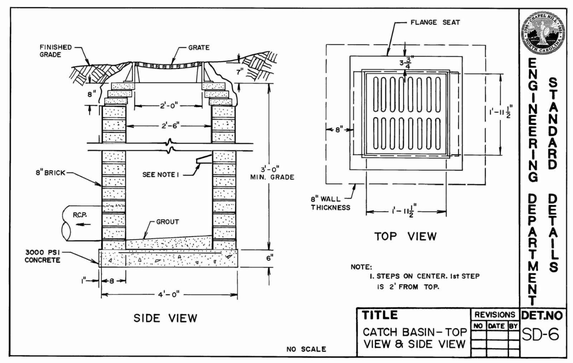
TITLE:	REVISIONS	DET.NO.
CURB INLET HOOD AND COVER	6/01 JH 1/03 JH	SD-5C

ENGINEERING DEPARTMENT STANDARD DETAILS



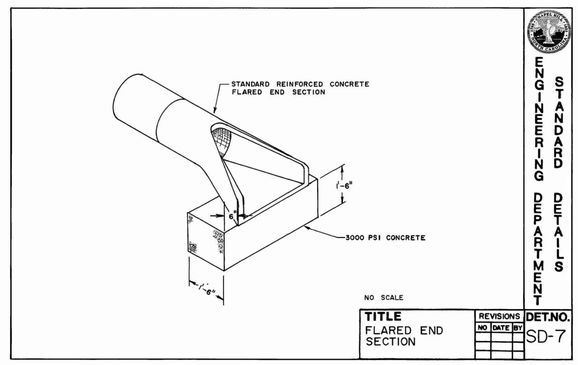
TITLE	REVISIONS	DET.NO.
CURB INLET— SIDE VIEW	NO DATE BY	SD-5

ENGINEERING DEPARTMENT STANDARD DETAILS



TITLE	REVISIONS	DET.NO
CATCH BASIN- TOP VIEW & SIDE VIEW	NO DATE BY	SD-6

ENGINEERING DEPARTMENT STANDARD DETAILS



TITLE	REVISIONS	DET.NO.
FLARED END SECTION	NO DATE BY	SD-7

ENGINEERING DEPARTMENT STANDARD DETAILS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 054445 HOWARD S. TROMBRIDGE

REVISIONS

NO.	DATE

PLAN INFORMATION

PROJECT NO.	UNC-22005
FILENAME	UNC22005-D1
CHECKED BY	KST
DRAWN BY	SME
SCALE	N/A
DATE	04.19.2024

SHEET

STORM DRAINAGE DETAILS

C8.03

STORMWATER CONTROL MEASURE CONSTRUCTION SPECIFICATIONS

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, ANY DISCREPANCIES IN THE PLANS AND NOTES SHALL BE BROUGHT TO THE DESIGN ENGINEER'S ATTENTION IMMEDIATELY. IF THE CONTRACTOR, IN THE COURSE OF WORK, FINDS ANY DISCREPANCIES IN THE PLANS OR NOTES GIVEN BY THE PROJECT ENGINEER, IT SHALL BE THEIR DUTY TO IMMEDIATELY INFORM THE PROJECT ENGINEER IN WRITING. ANY WORK DONE AFTER SUCH A DISCOVERY, UNTIL AUTHORIZED, WILL BE AT THE CONTRACTOR'S RISK.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LICENSES AND PERMITS REQUIRED TO COMPLETE THE WORK INCLUDED IN THE CONTRACT DOCUMENTS AT THE CONTRACTOR'S EXPENSE.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THEY AND THEIR SUBCONTRACTORS HAVE THE CORRECT AND MOST UP-TO-DATE PLANS AVAILABLE.
4. THE PROJECT WILL MEET ALL RELEVANT DESIGN REQUIREMENTS IN THE NCDEQ MANUAL AND THE TOWN OF CHAPEL HILL REGULATIONS AND STANDARDS.
5. THE DESIGN ENGINEER OR THEIR REPRESENTATIVE SHALL BE ON SITE FOR THE INSTALLATION OF ESSENTIAL ELEMENTS OF THE PRINCIPAL SPILLWAY INCLUDING BUT NOT LIMITED TO THE ANTI-FLOAT BLOCK, RISER, CONCRETE COLLAR, CONCRETE CRADLE, AND THE OUTLET BARREL. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER 72 HOURS PRIOR TO INSTALLATION OF THESE ITEMS TO ENSURE THAT A REPRESENTATIVE CAN BE ON-SITE. PHOTOGRAPHS OF THESE ITEMS MUST BE TAKEN PRIOR TO BACKFILLING FOR USE IN THE AS-BUILT PHASE. IF THE CONTRACTOR INSTALLS THESE WITHOUT THE ENGINEER OR ENGINEER'S REPRESENTATIVE ON-SITE, THEN THE ELEMENTS SHALL BE UNCOVERED FOR INSPECTION AT THE CONTRACTOR'S EXPENSE.
6. THE FINAL CERTIFICATION FOR THIS FACILITY WILL INCLUDE A CERTIFICATION BY THE ON-SITE GEOTECHNICAL ENGINEER THAT THE PROJECT WAS CONSTRUCTED PER THE APPROVED PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE ON-SITE GEOTECHNICAL ENGINEER FOR OBSERVATION AND TESTING SUCH THAT THE ON-SITE GEOTECHNICAL ENGINEER CAN CERTIFY THE CONSTRUCTION OF THE DAM EMBANKMENT AND SPILLWAY. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR MATERIALS AND COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY.
7. ALL CONSTRUCTION ACTIVITY RELATED TO THE PROPOSED STORMWATER CONTROL MEASURE SHALL BE PER THE DETAILS AND SPECIFICATIONS SHOWN IN THESE DRAWINGS. SOILS, COMPACTION, AND OTHER MISCELLANEOUS DETAILS AND SPECIFICATIONS MAY BE MODIFIED PER THE RECOMMENDATIONS OF THE ON-SITE GEOTECHNICAL ENGINEER. HOWEVER, PRIOR TO IMPLEMENTATION, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATION FROM THESE DESIGN DRAWINGS, INCLUDING SHOP DRAWINGS FOR ANY PROPOSED MODIFICATION.
8. DURING THE INITIAL STAGES OF CONSTRUCTION, THE STORMWATER CONTROL MEASURE MAY BE USED AS A SEDIMENT BASIN FOR EROSION CONTROL PURPOSES. IF SO, THE CONTRACTOR SHALL FOLLOW THE GENERAL CONSTRUCTION SEQUENCE BELOW:
   A. THE CONTRACTOR SHALL CONSTRUCT THE ENTIRE FACILITY (PERMANENT OUTLET STRUCTURE, DAM, ETC.) WITH THE EXCEPTION OF THE INTERIOR FINE GRADING FOR THE FACILITY. THE INTERIOR FINE GRADING WILL BE CONSTRUCTED ONCE THE EROSION CONTROL PHASE IS COMPLETE.
   B. THE TEMPORARY DRAWDOWN RISER (OR SKIMMER) SHALL BE CONNECTED TO THE PERMANENT 6"Ø DIP DRAIN PIPE.
   C. ONCE THE UPSTREAM DRAINAGE AREA IS STABILIZED AND THE EROSION CONTROL INSPECTOR APPROVES THE REMOVAL OF THE SEDIMENT BASIN, THE CONTRACTOR SHALL REMOVE THE TEMPORARY DRAWDOWN RISER (OR SKIMMER) AND CLEAN OUT THE BASIN IN ACCORDANCE WITH EROSION CONTROL STANDARD PRACTICES. ALL SEDIMENT, TRASH, ETC. SHALL BE DISPOSED OF PROPERLY (I.E. PLACED IN A LANDFILL) AND NOT STOCKPILED IN AN AREA WHERE WATER QUALITY COULD BE ADVERSELY AFFECTED.
   D. ONCE THE BASIN IS CLEANED OUT, AND ALL EROSION CONTROL DEVICES REMOVED, THE CONTRACTOR SHALL CONSTRUCT THE INTERIOR GRADING SHOWN ON THIS SHEET.
   E. ONCE THE GRADING IS COMPLETE, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION AND AN AS-BUILT SURVEY PRIOR TO INSTALLATION OF THE STORMWATER CONTROL MEASURE PLANTS. IF THE CONTRACTOR PLANTS THE PROPOSED VEGETATION PRIOR TO AN AS-BUILT SURVEY (AND SUBSEQUENT APPROVAL), ANY CHANGES TO THE GRADING / RE-PLANTING OF PLANTS WILL BE AT THE CONTRACTOR'S EXPENSE.
   F. ONCE THE ENGINEER HAS APPROVED THE AS-BUILT GRADING, THE CONTRACTOR SHALL PLANT THE PROPOSED STORMWATER CONTROL MEASURE PLANTS SHOWN ON THE LANDSCAPE PLAN FOR THE FACILITY. AFTER COMPLETION OF THE PLANTING, THE LANDSCAPE CONTRACTOR SHALL PROVIDE A LETTER TO THE ENGINEER CERTIFYING THAT THE PLANTS HAVE BEEN INSTALLED PER THE APPROVED STORMWATER CONTROL MEASURE PLANTING PLAN.
9. ALL OSHA REQUIREMENTS FOR EXCAVATIONS (SHORING, DEPTH, ETC.) ARE THE RESPONSIBILITY OF THE CONTRACTOR. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN TO BE SEALED BY A NC P.E. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE IF AN EXCAVATION PLAN IS REQUIRED. THE JOHN R. MCADAMS COMPANY ASSUMES NO RESPONSIBILITY FOR ANY EXCAVATION DESIGN RELATED TO SAFETY OR OSHA REQUIREMENTS.
10. ON-SITE GEOTECHNICAL ENGINEER SHALL DETERMINE THE IN-SITU SOIL INFILTRATION RATE OF THE STORMWATER CONTROL MEASURE BOTTOM. BASED ON THE RESULTS, THE DESIGN ENGINEER SHALL DETERMINE IF A LINER WILL BE NEEDED TO MAINTAIN A PERMANENT POOL. UPON DETERMINATION OF HIGHLY PERMEABLE SOILS AND THE SEASONAL HIGH WATER TABLE OUTSIDE OF THE ACCEPTABLE RANGE, THE DESIGN ENGINEER WILL PROVIDE SPECIFICATIONS FOR THE LINER.
11. IT IS ANTICIPATED THAT DEWATERING WILL BE NECESSARY IN THE EXCAVATION AREAS (E.G. - EMBANKMENT SUB GRADE, INTERIOR PORTIONS OF THE STORMWATER CONTROL MEASURE, AND KEY TRENCH). THEREFORE, THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ANY PUMPING EQUIPMENT, ETC. NEEDED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE STORMWATER CONTROL MEASURE SITE. DURING PLACEMENT OF FILL WITHIN THESE AREAS, THE CONTRACTOR SHALL KEEP THE WATER LEVEL BELOW THE BOTTOM OF THE EXCAVATION / CONSTRUCTION AREAS. THE MANNER IN WHICH THE WATER IS REMOVED SHALL BE SUCH THAT THE EXCAVATION BOTTOM AND SIDE SLOPES ARE STABLE, WITH NO SEDIMENT DISCHARGED FROM THE SITE (I.E. PUMPED WATER MAY NEED TO BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE PRIOR TO DISCHARGE).
12. PRIOR TO TOPSOIL INSTALLATION, THE CONTRACTOR SHALL SCARIFY THE TOP 2-3" OF THE BERM SECTION TO PROMOTE BONDING OF THE TOPSOIL WITH THE COMPACTED FILL. THE TOPSOIL DEPTH SHALL RANGE FROM 3-4" ON THE DAM EMBANKMENT AND AQUATIC SHELF. PLEASE NOTE THE TOPSOIL SHALL BE AMENDED AS DIRECTED BY A LANDSCAPE PROFESSIONAL PRIOR TO INSTALLATION ON THE EMBANKMENT AND AQUATIC SHELF.
13. THE CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY PERIOD FOR ALL PLANTINGS IN THE STORMWATER CONTROL MEASURE.
14. THE CONTRACTOR SHALL REFER TO THE LANDSCAPING PLAN FOR THE PERMANENT PLANTING PLAN/SCHEDULE FOR THIS FACILITY. CONTRACTOR SHALL COORDINATE WITH A LANDSCAPE PROFESSIONAL REGARDING SCHEDULING FOR PLANT INSTALLATION. PLEASE NOTE THAT NO TREES/SHRUBS OF ANY TYPE MAY BE PLANTED ON FILL AREAS OF THE PROPOSED DAM EMBANKMENT.

OUTLET STRUCTURE MATERIAL SPECIFICATIONS

1. THE 18"Ø RCP OUTLET BARREL SHALL BE CLASS III O-RING RCP, MODIFIED BELL AND SPIGOT, MEETING THE REQUIREMENTS OF ASTM C76-LATEST. THE PIPES SHALL HAVE SINGLE OFFSET JOINTS MEETING ASTM C-443-LATEST.
2. THE STRUCTURAL DESIGN FOR THE 4' X 4' (INTERNAL DIMENSIONS) RISER BOX WITH EXTENDED BASE SHALL BE BY OTHERS. PRIOR TO ORDERING THE STRUCTURES, THE CONTRACTOR SHALL PROVIDE, TO THE DESIGN ENGINEER FOR REVIEW, SHOP DRAWINGS AND SUPPORTING STRUCTURAL CALCULATIONS SEALED BY A P.E. REGISTERED IN NORTH CAROLINA DEMONSTRATING THE PERTINENT VERTICAL LOADS ARE SUPPORTED BY THE CONCRETE RISER STRUCTURE.
3. THE RISER BOX OUTLET STRUCTURE SHALL BE PROVIDED WITH STEPS 16" ON CENTER. STEPS SHALL BE PROVIDED ON THE INNER WALL OF THE RISER BOX. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66. PLEASE REFER TO SHEET C9.01 FOR LOCATION OF THE RISER STEPS. NOTE THE STEPS SHALL LINE UP WITH THE ACCESS HATCH OF THE TRASH RACK.
4. THE CONCRETE ANTI-FLOTATION BLOCK SHALL BE CAST-IN-PLACE. STEEL REINFORCEMENT AND CONNECTION TO THE RISER SHALL BE PROVIDED IN ACCORDANCE WITH THE DETAIL ON SHEET C9.02. THE CONTRACTOR SHALL ENSURE THE WEIGHT OF THE ENTIRE RISER STRUCTURE IS GREATER THAN OR EQUAL TO 14,470 LBS.
5. THE RISER BOX JOINTS SHALL BE SEALED USING BUTYL RUBBER SEALANT CONFORMING TO ASTM-C990-LATEST. IF NECESSARY, THE CONTRACTOR SHALL INCORPORATE A WATERSTOP INTO THE RISER BOX JOINT TO ENSURE A WATERTIGHT CONNECTION. THE CONTRACTOR SHALL PARGE JOINTS ON BOTH THE INSIDE AND OUTSIDE WITH NON-SHRINK GROUT AND INSTALL GALVANIZED STEEL STRAPS PER DETAIL ON SHEET C9.01.
6. PRIOR TO ORDERING, THE CONTRACTOR SHALL SUBMIT TRASH RACK SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. CONTRACTOR SHALL ENSURE THAT AN ACCESS HATCH IS PROVIDED ON THE TRASH RACK (SEE DETAIL SHEET C9.02 FOR LOCATION) THAT WILL ALLOW FOR FUTURE MAINTENANCE ACCESS. NOTE THE ACCESS HATCH SHALL LINE UP WITH THE ACCESS STEPS AFTER INSTALLATION.
7. ALL POURED CONCRETE SHALL MEET THE FOLLOWING SPECIFICATIONS UNLESS OTHERWISE NOTED:

   -MINIMUM 3000 PSI (28 DAY)
   -SLUMP = 3" - 5"
   -ENTRAINED AIR = 5% - 7%

   PLEASE NOTE NO CONCRETE SHALL BE POURED WHEN THE AMBIENT AIR TEMPERATURES ARE EXPECTED TO BE ABOVE 85°F OR BELOW 40°F. CAST-IN-PLACE CONCRETE SHALL BE "WET CURED" AFTER FINISHING FOR A MINIMUM OF 48 HOURS.

   CAST-IN-PLACE CONCRETE TO BE VIBRATED AS NECESSARY.

   ON-SITE GEOTECHNICAL ENGINEER TO TEST AND CERTIFY ALL POURED CONCRETE MEETS THE ABOVE SPECIFICATIONS. CONCRETE CYLINDERS FOR TESTING TO BE OBTAINED AT TIME OF POURING OF CAST-IN-PLACE STRUCTURES.
8. GEOTEXTILE FABRIC FOR THE 18"Ø RCP OUTLET BARREL JOINTS SHALL BE MIRAFI 180N OR ENGINEER APPROVED EQUAL (NON-WOVEN FABRIC).
9. STORMWATER CONTROL MEASURE EMERGENCY DRAWDOWN IS VIA AN 6"Ø PLUG VALVE. THE VALVE SHALL BE A M&H STYLE 1820 ECCENTRIC VALVE OR APPROVED EQUAL. THIS VALVE IS IN ACCORDANCE WITH AWWA C-517, AND SHALL BE OPERABLE FROM TOP OF OUTLET STRUCTURE VIA A HAND WHEEL (SEE DETAIL SHEET C9.01). THE CONTRACTOR SHALL PROVIDE A REMOVABLE VALVE WRENCH WITH A HAND WHEEL ON TOP FOR OPERATION OF THE 6"Ø PLUG VALVE.

CONSTRUCTION SEQUENCE

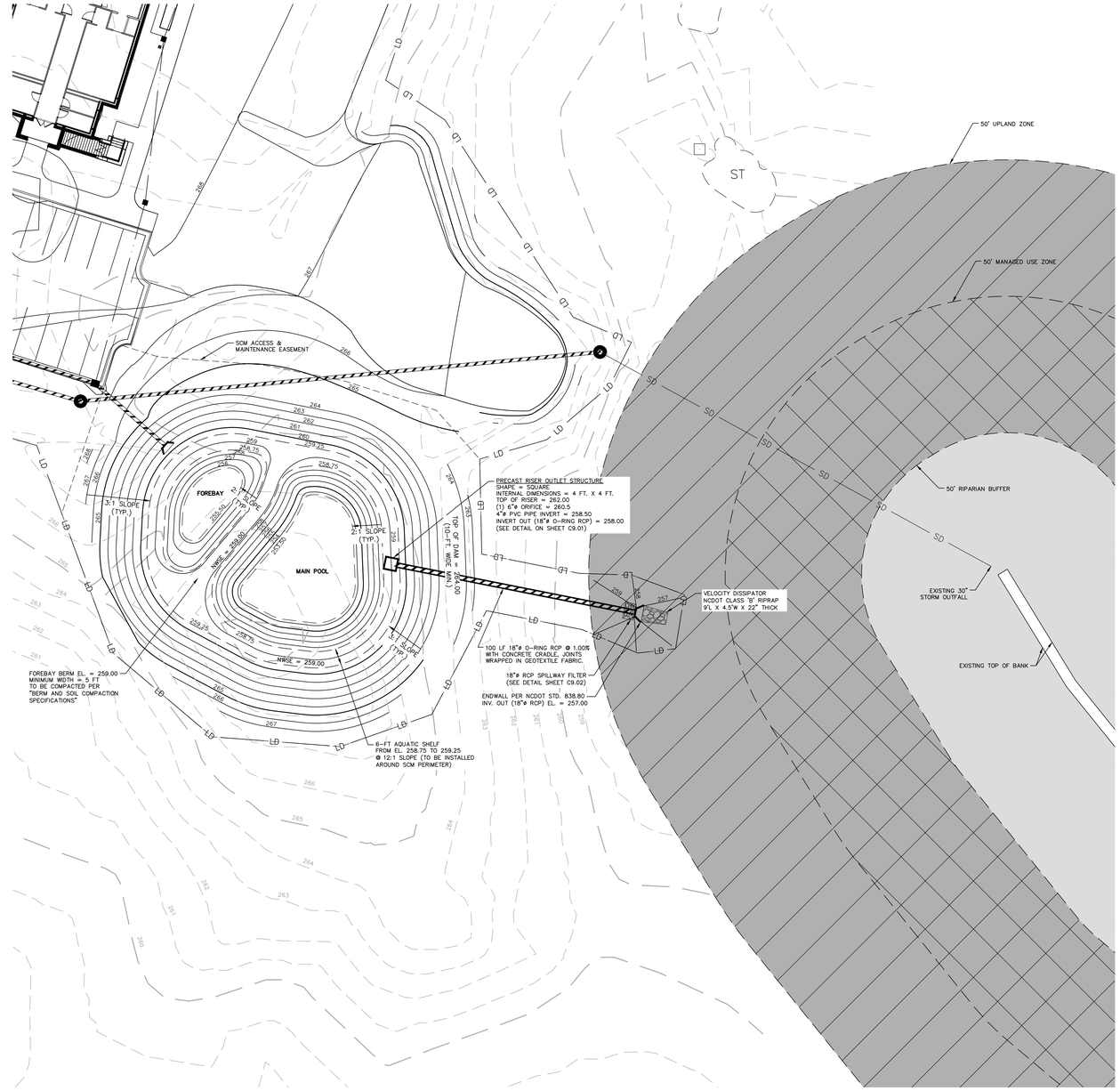
1. PRIOR TO CONSTRUCTION, THE OWNER SHALL OBTAIN A LAND DISTURBING (GRADING) PERMIT AND AN "APPROVAL TO CONSTRUCT" FROM THE TOWN OF CHAPEL HILL AND ALL OTHER NECESSARY PERMITS FROM APPLICABLE AGENCIES (E.G. 404 / 401 PERMITS).
2. INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES PER THE APPROVED SEDIMENT AND EROSION CONTROL PLAN. THE CONTRACTOR SHALL MAINTAIN ALL APPROVED SEDIMENT AND EROSION CONTROL MEASURES THROUGHOUT THE ENTIRE PROJECT, AS REQUIRED. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE EROSION CONTROL INSPECTOR, AS REQUIRED BY GOVERNING AGENCIES, PRIOR TO ANY CLEARING.
3. CLEAR AND GRUB AREA WITHIN THE LIMITS OF THE PROPOSED DAM CONSTRUCTION, ADHERING TO THE "BERM AND SOIL COMPACTION" NOTES. ALL TREES AND THEIR ENTIRE ROOT SYSTEMS MUST BE REMOVED FROM THE DAM FOOTPRINT AREA AND BACKFILLED WITH SUITABLE SOIL MATERIAL. THE BACKFILLED AREAS SHALL BE COMPACTED TO THE SAME STANDARDS AS THE DAM EMBANKMENT. THE REMAINING AREA OF THE EMBANKMENT SHALL BE STRIPPED TO A SUITABLE DEPTH AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER. ANY RESIDUAL SOILS TO BE LEFT IN PLACE MUST BE WELL SCARIFIED TO PROMOTE BONDING OF THE NEW EMBANKMENT FILL. NO EMBANKMENT MATERIAL SHALL BE PLACED FOR THE DAM OR KEY TRENCH UNTIL APPROVAL OF THE DAM SUBGRADE IS OBTAINED FROM THE ON-SITE GEOTECHNICAL ENGINEER.
4. EXCAVATE FOR THE NEW KEY TRENCH ALONG THE CENTERLINE OF THE PROPOSED DAM EMBANKMENT. THE TRENCH SHALL EXTEND A MINIMUM OF 5 FT BELOW EXISTING GRADE OR 2 FT BELOW THE 18"Ø RCP OUTLET BARREL AND SHALL HAVE A MINIMUM BOTTOM WIDTH OF 5 FEET. THE KEY TRENCH SIDESLOPES SHALL BE A MINIMUM OF 1:1 (H:V). WHEN EXCAVATING THE KEY TRENCH, IF ANY DEBRIS IS ENCOUNTERED TO AN EXTENT THAT SUCH DEBRIS MAY EXIST IN OTHER INSITU PORTIONS OF THE DAM EMBANKMENT, IT SHOULD ALSO BE REMOVED. THE KEY TRENCH SHALL BE COMPACTED TO THE SAME SPECIFICATION LISTED IN ITEM 4 OF THE "BERM AND SOIL COMPACTION SPECIFICATIONS" NOTES. DEPENDING UPON ON-SITE SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION, THE ON-SITE GEOTECHNICAL ENGINEER MAY VARY THE DEPTH AND DIMENSIONS OF THE KEY TRENCH AS DEEMED NECESSARY. THE ON-SITE GEOTECHNICAL ENGINEER SHALL RETAIN DOCUMENTATION OF ANY VARIATION FOR FUTURE AS-BUILT SUBMITTALS TO THE TOWN OF CHAPEL HILL.
5. BEGIN PLACEMENT OF BACKFILL WITHIN THE KEY TRENCH. THE KEY TRENCH SHALL BE COMPACTED TO THE SPECIFICATIONS LISTED IN ITEM 4 OF THE "BERM AND SOIL COMPACTION SPECIFICATIONS" NOTES. THE KEY TRENCH SHALL BE TESTED PER THE SPECIFICATIONS LISTED IN THAT SECTION.
6. CONTRACTOR SHALL GIVE THE DESIGN ENGINEER A MINIMUM OF 72 HOURS NOTICE PRIOR TO THE INSTALLATION OF THE SPILLWAY.
7. PRIOR TO INSTALLATION, SUBGRADE CONDITIONS ALONG THE SPILLWAY PIPES SHOULD BE EVALUATED BY THE ON-SITE GEOTECHNICAL ENGINEER TO ASSESS WHETHER SUITABLE BEARING CONDITIONS EXIST AT THE SUBGRADE LEVEL. SHOULD SOFT OR OTHERWISE UNSUITABLE CONDITIONS BE ENCOUNTERED ALONG THE PIPE ALIGNMENTS, THESE MATERIALS SHOULD BE UNDERCUT AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE UNDERCUT MATERIALS SHALL BE REPLACED WITH ADEQUATELY COMPACTED STRUCTURAL FILL, LEAN CONCRETE OR FLOWABLE FILL AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.
8. IN ORDER TO HELP PROTECT THE SOIL SUBGRADE FROM DETERIORATION (DUE TO EXPOSURE, RAINFALL, SEEPAGE, AND RUNOFF) BEFORE THE CRADLE CAN BE POURED, IT IS STRONGLY RECOMMENDED THAT A 2" TO 4" THICK CONCRETE MUD MAT BE POURED OVER THE SUBGRADE ONCE IT IS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE MUD MAT WILL ALSO PROVIDE BEARING FOR THE BLOCKS THAT TEMPORARILY SUPPORT THE SPILLWAY PIPE UNTIL THE CRADLE CAN BE POURED. THE METHOD OF BLOCK SUPPORT FOR THE PIPE PROPOSED BY THE CONTRACTOR SHOULD BE SUBMITTED TO THE JOHN R. MCADAMS COMPANY FOR REVIEW.
9. BEGIN CONSTRUCTION OF THE NEW EMBANKMENT. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS PRIOR TO COMPACTION, UNLESS DIRECTED OTHERWISE BY THE ON-SITE GEOTECHNICAL ENGINEER. FILL LIFTS SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH OF FILL. IF IT IS NECESSARY, THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT BACK TO FINAL GRADE IN ORDER TO ACHIEVE PROPER COMPACTION.
10. AS CONSTRUCTION OF THE EMBANKMENT MOVES FORWARD, IT WILL BE NECESSARY TO INSTALL THE CONCRETE CRADLE. SEE NOTE ON CRADLE DETAIL (SHEET C9.02). THE PROPOSED STRUCTURAL FILL MATERIAL SHALL BE UTILIZED AS THE FORMWORK FOR THE CONCRETE CRADLE. THE STRUCTURAL FILL SHOULD BE INSTALLED AND COMPACTED UP TO THE TOP OF CONCRETE CRADLE ELEVATION. ONCE THE STRUCTURAL FILL REACHES THE NEXT DOWNSTREAM JUNCTION BOX OR HEADWALL AND IS COMPACTED TO THE ELEVATION OF THE TOP OF THE CONCRETE CRADLE, EXCAVATE THE CONCRETE CRADLE TRENCH PER THE PROVIDED DETAILS AND CONSTRUCT THE CONCRETE CRADLE AS PER THE PROVIDED CONCRETE CRADLE DETAIL. THE CRADLE SHALL NOT BE BEDDED ON STONE MATERIAL.
11. INSTALL RISER / BARREL ASSEMBLY, ALONG WITH THE EMERGENCY DRAIN SYSTEM. INSTALL 18" RCP OUTLET BARREL SPILLWAY FILTER FROM THE DETAILS SHOWN ON SHEET C9.02.
12. CONSTRUCT EMBANKMENT PER SPECIFICATIONS LISTED IN THE "BERM AND SOIL COMPACTION SPECIFICATIONS" NOTES AND REQUIREMENTS OF THE ON-SITE GEOTECHNICAL ENGINEER. ALL CHARACTERISTICS OF THE EMBANKMENT FILL MATERIAL SHALL MEET THE STANDARDS SET FORTH IN THE "BERM AND SOIL COMPACTION SPECIFICATIONS" NOTES, INCLUDING COMPACTION AND MOISTURE REQUIREMENTS. IF NECESSARY TO ACHIEVE PROPER COMPACTION, THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT BACK TO PROPER FINAL GRADE. ANY HAND COMPACTION ACTIVITIES AROUND SPILLWAY OR DRAIN STRUCTURES SHALL BE CONDUCTED IN 4-INCH LOOSE LIFTS AND BE TO THE SAME COMPACTION AND MOISTURE REQUIREMENTS AS THE ENTIRE EMBANKMENT. ALL COMPACTION AND MOISTURE TESTING SHALL BE CARRIED OUT AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER AND AS LISTED IN THE "BERM AND SOIL COMPACTION SPECIFICATIONS" NOTES.
13. UPON COMPLETION OF DAM EMBANKMENT, PROMPTLY STABILIZE AND SEED DAM EMBANKMENT PER SEEDING SCHEDULE. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER THE PERMANENT SEEDING SCHEDULE FOUND ON SHEET C9.03.
14. SCHEDULE A FINAL AS-BUILT INSPECTION AND AS-BUILT SURVEY WITH THE ENGINEER AND SURVEYOR. AN AS-BUILT INSPECTION AND SURVEY SHALL BE SCHEDULED BEFORE IMPOUNDING WATER IN THE FACILITY AND A MINIMUM OF 60 DAYS PRIOR TO THE ANTICIPATED DATE OF CERTIFICATION APPROVAL. ANY COMMENTS OR DEFICIENCIES IN THE SCM CONSTRUCTION MUST BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AND OWNER BEFORE CERTIFICATION SHALL BE GRANTED.

BERM AND SOIL COMPACTION SPECIFICATIONS

1. PRIOR TO CONSTRUCTION, THE ON-SITE GEOTECHNICAL ENGINEER SHALL IDENTIFY BORROW / FILL AREAS AND VERIFY THEIR SUITABILITY FOR USE WITHIN THE DAM EMBANKMENT. ALSO, THE ON-SITE GEOTECHNICAL ENGINEER SHALL PERFORM STANDARD PROCTORS ON THE PROPOSED BORROW MATERIAL TO ENSURE THAT OPTIMUM MOISTURE CONTENT AND COMPACTION CAN BE ACHIEVED / CONTROLLED DURING CONSTRUCTION.
2. ALL FILL MATERIALS TO BE USED FOR THE DAM EMBANKMENT SHALL BE TAKEN FROM BORROW AREAS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, WOOD, STONES GREATER THAN 6", AND FROZEN OR OTHER OBJECTIONABLE MATERIAL. THE FOLLOWING SOIL TYPES ARE SUITABLE FOR USE AS FILL WITHIN THE DAM EMBANKMENT AND KEY TRENCH: ML AND CL. ALL FILL MATERIALS SHALL BE APPROVED BY THE ONSITE GEOTECHNICAL ENGINEER FOR THE INTENDED USE.
3. FILL PLACEMENT FOR THE EMBANKMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT (UNCOMPACTED). EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT. FILL MATERIAL ADJACENT TO ALL SPILLWAY AND DRAINAGE STRUCTURES SHALL BE PLACED IN 4-INCH (UNCOMPACTED) LIFTS AND HAND-COMPACTED TO THE SAME COMPACTION AND MOISTURE REQUIREMENTS AS THE ENTIRE EMBANKMENT.
4. ALL FILL SOILS USED IN THE EMBANKMENT CONSTRUCTION SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). THE FILL SOILS SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN -2 TO +3 PERCENT OF ITS OPTIMUM MOISTURE CONTENT. COMPACTION TESTS SHALL BE PERFORMED BY THE ON-SITE GEOTECHNICAL ENGINEER DURING CONSTRUCTION TO VERIFY THAT THE PROPER COMPACTION LEVEL HAS BEEN REACHED. THE FILL SHOULD BE COMPACTED USING A SHEEPSFOOT TYPE COMPACTOR. IN ORDER TO PREVENT DAMAGE TO THE PIPE, NO COMPACTION EQUIPMENT SHALL CROSS ANY PIPE UNTIL MINIMUM COVER IS ESTABLISHED ALONG THE PIPE.
5. THE DESIGN ENGINEER SHALL BE PROVIDED WITH REPORTS AND CERTIFICATION BY THE ON-SITE GEOTECHNICAL ENGINEER THAT THE GEOTECHNICAL ASPECTS OF THE FACILITY HAVE BEEN CONSTRUCTED PER PLAN. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR MATERIALS AND COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY. THESE REPORTS AND CERTIFICATION WILL BE NEEDED DURING THE AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER CONTROL MEASURE. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE TESTING AND OBSERVATION WITH THE ON-SITE GEOTECHNICAL ENGINEER.
6. TESTING OF THE NEW FILL MATERIALS SHALL BE PERFORMED TO VERIFY THAT THE RECOMMENDED LEVEL OF COMPACTION IS ACHIEVED DURING CONSTRUCTION. THEREFORE, ONE DENSITY TEST SHALL BE PERFORMED FOR EVERY 2,500 SQUARE FEET OF AREA FOR EVERY LIFT OF FILL OR AS RECOMMENDED BY THE ON-SITE GEOTECHNICAL ENGINEER.
7. TESTING WILL BE REQUIRED ALONG THE 18"Ø RCP OUTLET BARREL AT A FREQUENCY OF ONE TEST PER 25 LF OF PIPE PER VERTICAL FOOT OF FILL OR AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.

STATEMENT OF RESPONSIBILITY

1. ALL REQUIRED MAINTENANCE AND INSPECTIONS OF THE STORMWATER CONTROL MEASURE SHALL BE THE RESPONSIBILITY OF THE OWNER, PER THE EXECUTED OPERATION AND MAINTENANCE AGREEMENT FOR THIS FACILITY.



STORMWATER WETPOND PLAN VIEW

1" = 20'

GRAPHIC SCALE
0 10 20 40
1 inch = 20 ft.

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 054404 ENGINEER MARK C. TORRES REGISTRATION NOT FOR CONSTRUCTION

REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO.	UNC-22005
FILENAME	UNC22005-SCM
CHECKED BY	MCT
DRAWN BY	MMJ
SCALE	1" = 20'
DATE	04. 19. 2024

SHEET

SCM PLAN VIEW
C9.00