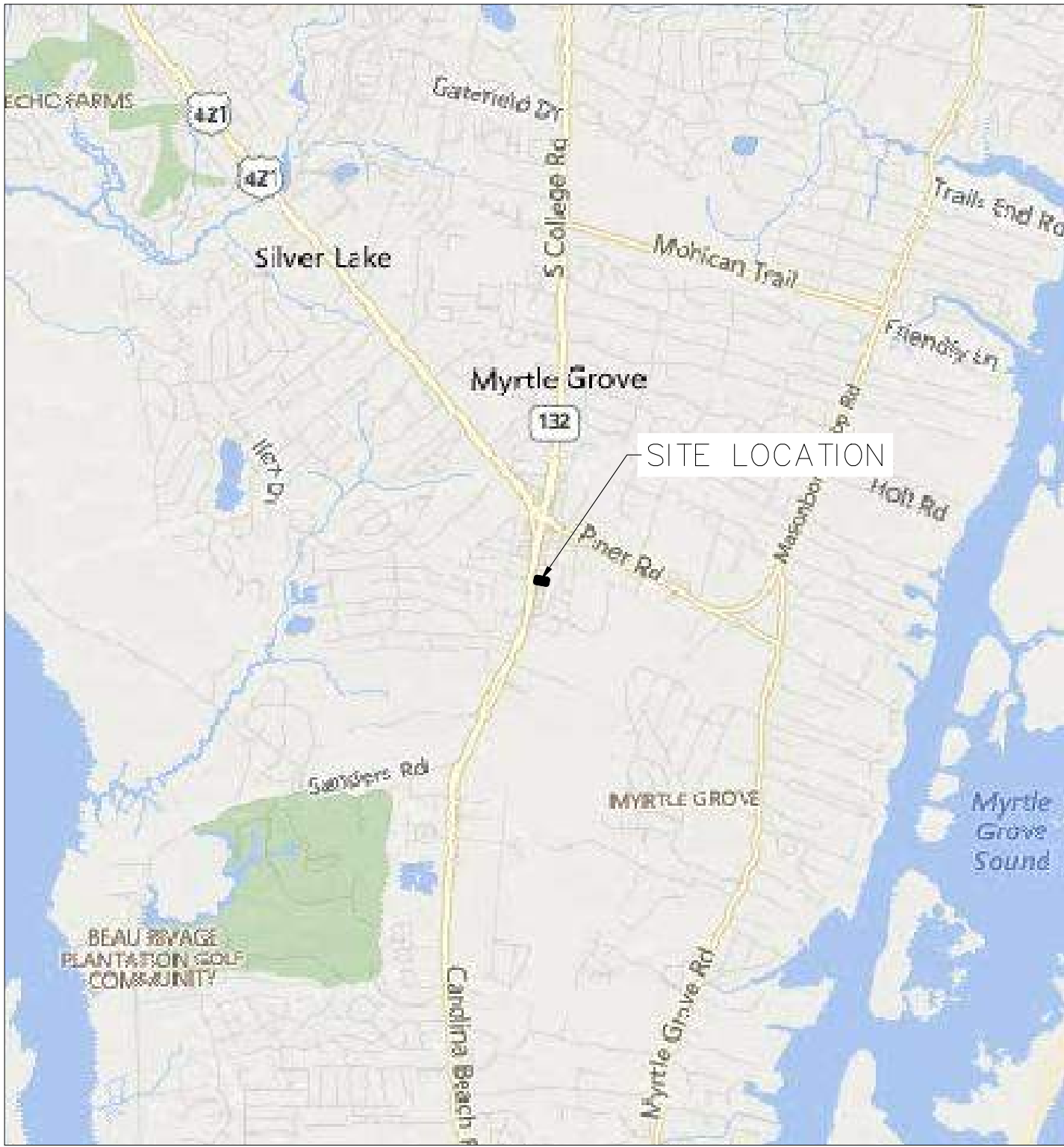


CONSTRUCTION DRAWING SUBMITTAL FOR

VALVOLINE INSTANT OIL CHANGE

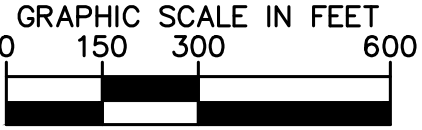
5561 CAROLINA BEACH ROAD, WILMINGTON, NC 28412



Vicinity Map
(NTS)



AREA MAP



Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER SHEET
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C1.0	EXISTING CONDITIONS AND DEMOLITION PLAN
C2.0	SITE PLAN
C3.0	GRADING AND DRAINAGE PLAN
C4.0	EROSION CONTROL PLAN
C5.0	UTILITY PLAN
C6.0	SITE DETAILS
C6.1	SITE DETAILS
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C7.0	STORM DRAINAGE DETAILS
C8.0	UTILITY DETAILS
C8.1	UTILITY DETAILS
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C8.4	UTILITY DETAILS
C8.5	UTILITY DETAILS
C9.0	EROSION CONTROL DETAILS
C9.1	EROSION CONTROL DETAILS
L1.0	LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS

PROJECT OWNER AND CONSULTANT

SITE DEVELOPER: VALVOLINE
8000 TOWER POINT DRIVE
CHARLOTTE, NC 28277
PHONE: (704)655-1018
ATTN: MICHAEL SLATTERY
mslattery@ncvioc.com

CIVIL ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE ST., SUITE 600
RALEIGH, NORTH CAROLINA 27601
PHONE: (919) 677-2057
ATTN: WES HALL, P.E.
wes.hall@kimley-horn.com

LANDSCAPE ARCHITECT: KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE ST., SUITE 600
RALEIGH, NORTH CAROLINA 27601
PHONE: (919) 653-5841
ATTN: MELISSA BRAND, PLA
melissa.brand@kimley-horn.com

SURVEYOR: VERNON DEREK DANFORD, P.L.S.
4002 1/2 OLEANDER DRIVE, SUITE 203
WILMINGTON, NC 28403
PHONE: (910) 799-4916

LIMITS OF DISTURBANCE: 0.70 AC

SURVEY NOTE:
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HORIZONTAL DATUM: NAD83 (2001)
VERTICAL DATUM: NAVD 1988

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PREPARED IN THE OFFICE OF:

Kimley»Horn

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SEPTEMBER 14, 2020

JOB NUMBER:

018852007

COVER SHEET

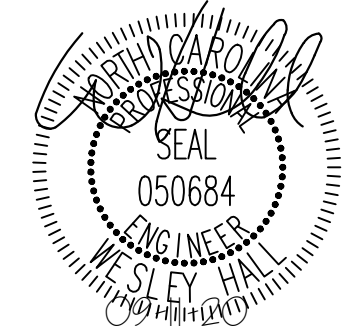
VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE

NEW HANOVER COUNTY NORTH CAROLINA

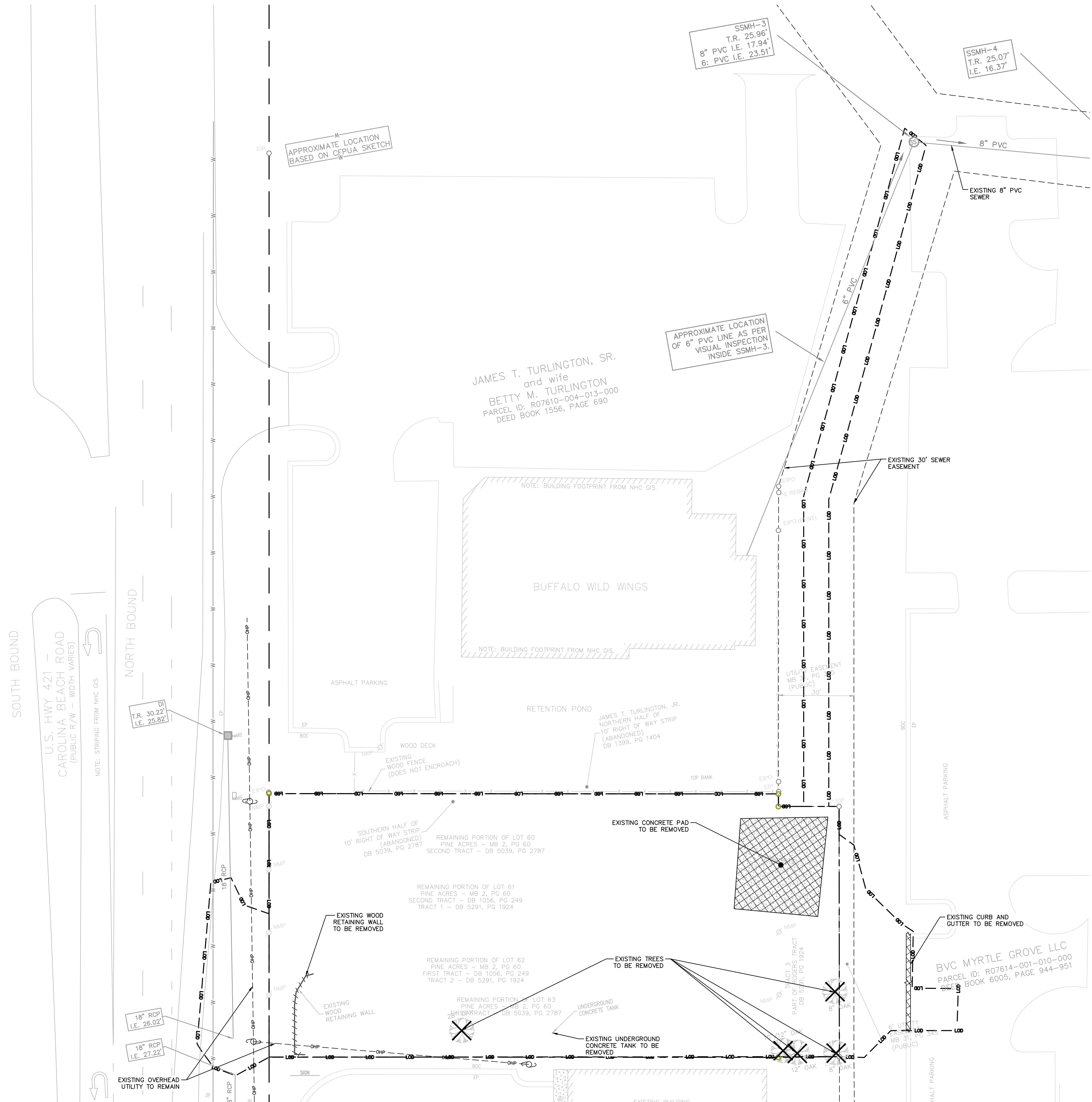
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KHA PROJECT 018005007	DATE 09/14/2020	SCALE AS SHOWN	DESIGNED BY JCL	DRAWN BY JCL	CHECKED BY WWH
--------------------------	--------------------	----------------	--------------------	-----------------	-------------------



DEMOLITION LEGEND

	PROPERTY LINE
	LIMITS OF DISTURBANCE
	DEMOLISH SITE ITEM
	SAWCUT
	TREE TO BE REMOVED
	CONCRETE TO BE REMOVED

- ## DEMOLITION NOTES
1. CONTRACTOR SHALL COORDINATE WITH NEW HANOVER COUNTY TO OBTAIN ALL NECESSARY DEMOLITION PERMITS PRIOR TO THE START OF DEMOLITION WORK.
 2. SAW CUT AND REMOVE CONCRETE CURB TO LIMITS REQUIRED FOR NEW WORK.
 3. REMOVE VEGETATION AND GRASS IN AREAS TO RECEIVE NEW ASPHALT AND CONCRETE PAVEMENTS.
 4. SAW CUT AND REMOVE ASPHALT PAVEMENT TO LIMITS INDICATED ON PLAN.
 5. THE CONTRACTOR SHALL DEMOLISH AND REMOVE OFF-SITE FACILITIES WITHIN THE PROJECT SITE TO INCLUDE SITE LIGHTING STRUCTURES, PAVEMENT, AND SECONDARY UTILITIES. ALL MATERIALS SHALL BE PROPERLY DISPOSED OF PER LOCAL AND STATE REGULATIONS.
 6. ALL PRIMARY UTILITIES DISCOVERED DURING DEMOLITION OPERATIONS THAT SERVE ACTIVITIES OTHER THAN THE EXISTING STRUCTURE SHALL BE PROPERLY PRESERVED AND PROTECTED.
 7. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER AND ENGINEER ANY UNFORESEEN OR ADVERSE CONDITIONS, INCLUDING UNEXHAUSTED UTILITIES, DISCOVERED DURING DEMOLITION OPERATIONS.

18,295 SF ONSITE EXISTING IMPERVIOUS AREA
18,295 SF ONSITE EXISTING IMPERVIOUS AREA TO BE REMOVED
0 SF ONSITE EXISTING IMPERVIOUS AREA TO REMAIN
66 SF OFFSITE EXISTING IMPERVIOUS TO BE REMOVED
18,361 SF TOTAL EXISTING IMPERVIOUS AREA TO BE REMOVED

LEGEND

- = EXISTING IRON PIPE OPEN (EIPO)
- ◻ = EXISTING MONUMENT FOUND (EOM)
- ▣ = CONCRETE MONUMENT SET (CMS)
- = 5/8" IRON REBAR SET
- Ø = NON-MONUMENTED POINT (NMP)
- EDP = EDGE OF PAVEMENT
- BOP = BACK OF CURB
- TB= TOP OF BANK
- T.R.= TOP RIM ELEVATION
- I.E.= INVERT ELEVATION
- MB= MAIL BOX

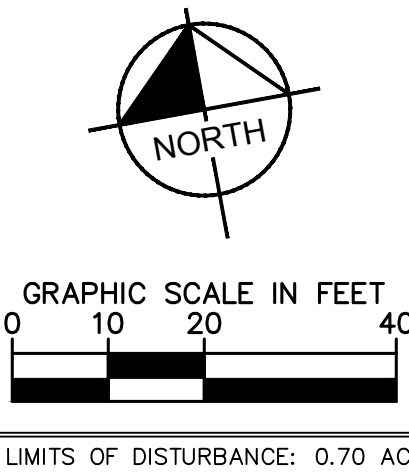
NOTES

1. THIS LOT IS LOCATED IN ZONE "X" PER FRIS ON FIRM MAP NUMBER 3720313400K DATED: 08/28/2018.
2. THIS LOT IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, OR COVENANTS OF RECORD.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT, WHICH MAY REVEAL ADDITIONAL CONVEYANCES, EASEMENTS OR RIGHT OF WAY NOT SHOWN HEREIN.
4. "BEST FIT MODEL" UTILIZED BASED UPON THE PREPONDERANCE OF EVIDENCE FOUND.
5. NC GRID BEARINGS DERIVED USING TOPCON UNIT, UTILIZING NORTH CAROLINA VRS SYSTEM.
6. ALL BEARINGS SHOWN ARE NC GRID (NAD83 2012B) EXCEPT AS SHOWN.
7. ALL DISTANCES ARE HORIZONTAL GROUND.
8. BENCHMARK ELEVATIONS DETERMINED USING TOPCON GPS UNIT, UTILIZING THE NORTH CAROLINA VRS SYSTEM.
9. ELEVATIONS BASED ON NAVD 88 DATUM.
10. COMBINED FACTOR: 1.00006542.
11. ZONING = B-2 REGIONAL BUSINESS DISTRICT, AS PER LETTER FROM NEW HANOVER COUNTY, PLANNING & LAND USE, DATED JULY 22, 2020.
12. RIGHT OF WAY OF CAROLINA BEACH ROAD HAS CHANGED SINCE RECORDED OF MAP BOOK 2 PAGE 60, DEEDS NOT FOUND, NOR PROVIDED TO THIS SURVEYOR.

I, VERNON DEREK DANFORD, CERTIFY THAT THIS PROPERTY WAS SURVEYED AND MAP DRAWN UNDER MY SUPERVISION:
DESCRIPTION AS SHOWN ON THE FACE OF THIS PLAT; RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1:10,000+; THAT
THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES PLOTTED FROM INFORMATION REFERENCED; THAT THIS PLAT WAS
PREPARED IN ACCORDANCE WITH "THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA"; WITNESS MY ORIGINAL
SIGNATURE, LICENSURE NUMBER AND SEAL THIS 11TH DAY OF AUGUST A.D. 2020

V. Derek Danford
VERNON DEREK DANFORD
N.C. PLS No. L-4528



NOTE:
THIS TOPOGRAPHIC SURVEY REPRESENTS ABOVE GROUND VISUAL
EVIDENCE. IT IS NECESSARY TO CALL AN UNDERGROUND LOCATOR
SERVICE BEFORE ANY EXCAVATION.



SURVEY NOTE:
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PROVIDED WITHIN A TOPOGRAPHICAL SURVEY PREPARED BY DANFORD
& ASSOCIATES, 4002 1/2 OLEANDER DRIVE SUITE 203, WILMINGTON, NC,
28403, ON 08/11/20.
HORIZONTAL DATUM: NAD83 (2001)
VERTICAL DATUM: NAVD 1988



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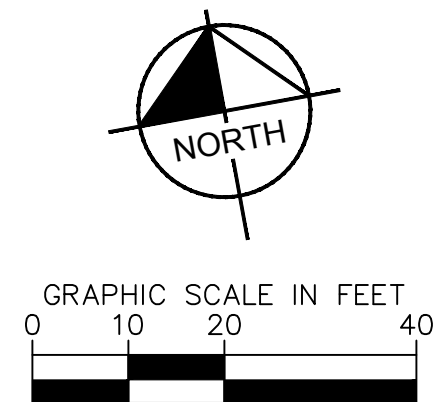
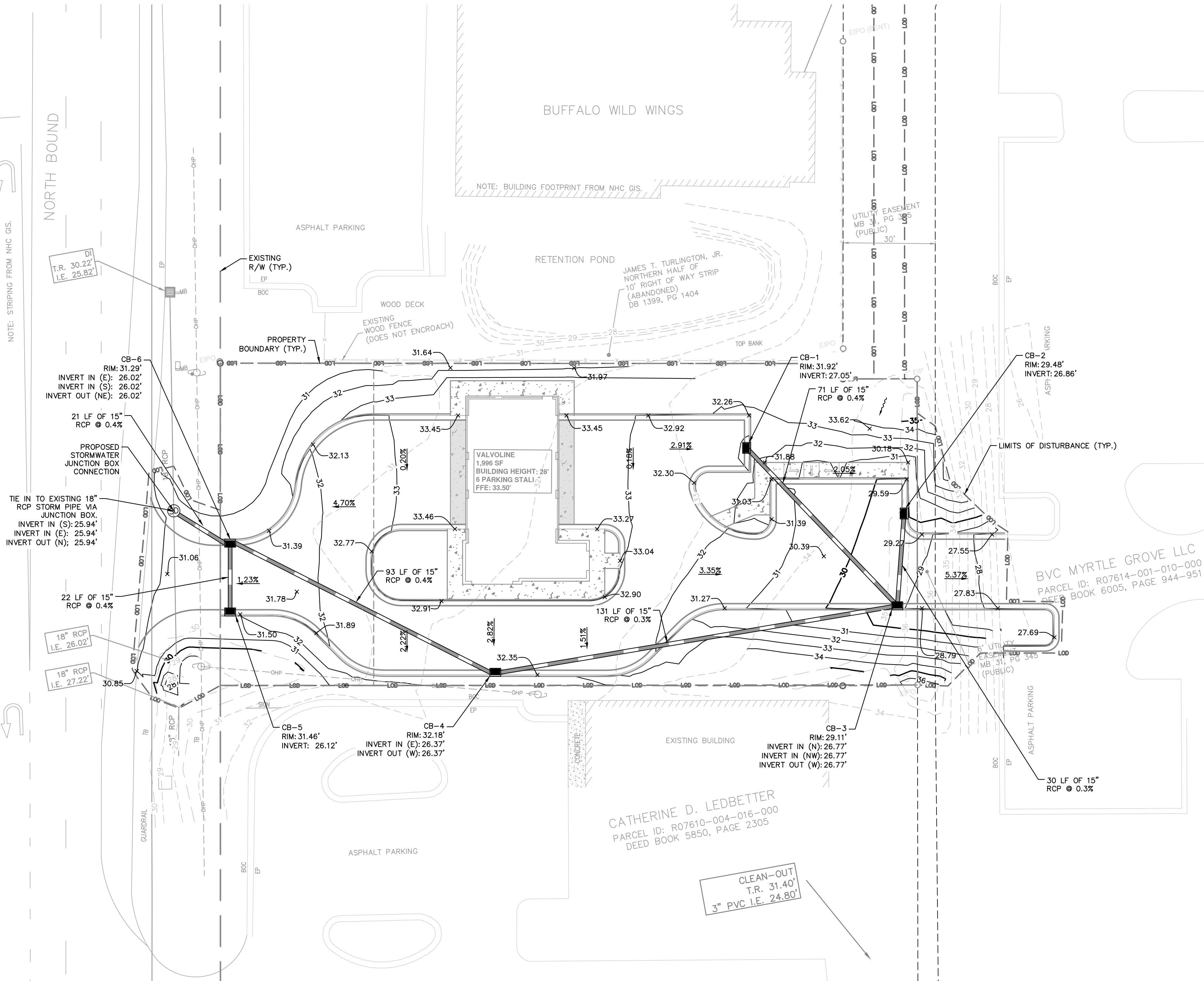
SHEET NUMBER C1.0	VALVOLINE CAROLINA BEACH PREPARED FOR VALVOLINE NEW HANOVER COUNTY NORTH CAROLINA	EXISTING CONDITIONS AND DEMOLITION PLAN	KHA PROJECT 018005007	DATE 09/14/2020	SCALE AS SHOWN DESIGNED BY JCL DRAWN BY JCL CHECKED BY WHH		 <p>© 2020 KIMLEY-HORN AND ASSOCIATES, INC. 421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601 PHONE: 919-677-2000 FAX: 919-677-2050 WWW.KIMLEY-HORN.COM #F-0102</p>	No. _____ REVISIONS _____ DATE _____ BY _____

Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH - Layout: C3.0 GRADING AND DRAINAGE PLAN September 11, 2020 04:40:28pm K:\RAL\LEDA\01852007_valvoline_carolina_beach_planning_phase\p15_cad_files\plansheets\C3.0 GRADING AND DRAINAGE PLAN.dwg
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SOUTH BOUND
U.S. HWY 421 -
CAROLINA BEACH ROAD
(PUBLIC R/W - WIDTH VARIES)

NOTE: STRIPING FROM NHC GIS.

NORTH BOUND



811
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VERTICAL DATUM: NAVD 1988

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GRADING AND DRAINAGE LEGEND	
	FLOW ARROW
	PROPOSED CONTOUR
	SPOT ELEVATION (FLOW LINE)
	EXISTING CONTOUR
	PROPOSED STORM PIPE
	CATCH BASIN (CB)

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE

NEW HANOVER
COUNTY

GRADING AND
DRAINAGE PLAN

KHA PROJECT
018005007
DATE
09/14/2020
SCALE AS SHOWN
DESIGNED BY JCL
DRAWN BY JCL
CHECKED BY WHH



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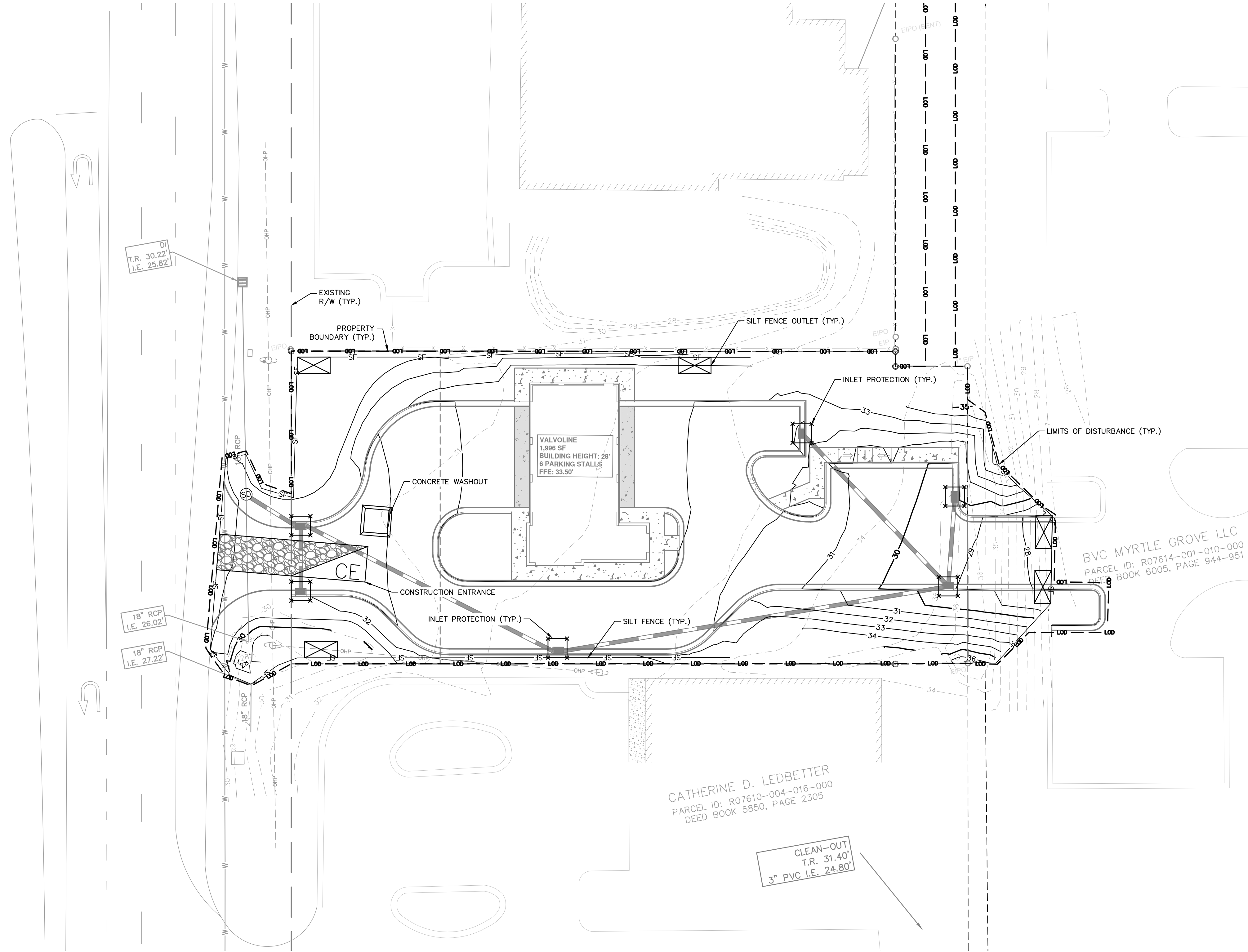
NO.	REVISIONS	DATE	BY

LIMITS OF DISTURBANCE: 0.70 AC

SHEET NUMBER
C3.0

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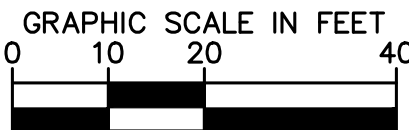
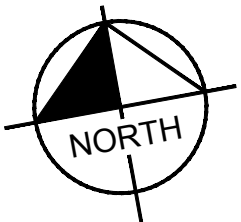
EROSION CONTROL LEGEND

---	PROPERTY LINE
---	LIMITS OF DISTURBANCE
---	SILT FENCE
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
	CONSTRUCTION ENTRANCE
	SILT FENCE OUTLET
	CONCRETE WASHOUT STATION
	INLET PROTECTION

NPDES GROUND COVER REQUIREMENTS

SITE AREA DESCRIPTION	STABILIZATION	TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE EXCEPT FOR PERIMETERS AND HQW ZONES.

LIMITS OF DISTURBANCE: 0.70 AC



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HORIZONTAL DATUM: NAD83 (2001)
VERTICAL DATUM: NAVD 1988

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EROSION CONTROL CONDITIONS AND REQUIREMENTS FOR CONTRACTOR

- HIGH WATER QUALITY AREA - THIS PROJECT IS LOCATED WITHIN A NCDENR DESIGNATED HIGH QUALITY WATER (HQW) BASIN CLASSIFICATION.
- PERMITS ON SITE - A COPY OF APPROVED EROSION CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- NOTICE OF VIOLATIONS - DEPOSITION OF SEDIMENT OFF SITE OR IN A STREAM OR WETLAND, ARE CONSIDERED VIOLATIONS OF THE PERMIT. VISIBLE DEPOSITION OF SEDIMENT SHALL BE REPORTED TO NCDENR DIVISION OF WATER QUALITY WITHIN 24 HOURS OF INSPECTION, CORRECTIVE ACTION SHALL BE TAKEN IMMEDIATELY TO CONTROL DISCHARGE OF ANY SEDIMENT OFF SITE OR INTO WATERS OF THE STATE.
- COORDINATION NOTIFICATIONS - CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
- MONITORING AND MAINTENANCE - A RAIN GAUGE SHALL BE MAINTAINED ON THE SITE. A WRITTEN RECORD OF DAILY RAINFALL AMOUNTS SHALL BE RETAINED, AT LEAST ONCE PER WEEK, INSPECT EACH EROSION CONTROL MEASURE TO ENSURE IT IS OPERATING CORRECTLY AND RECORDS ARE MAINTAINED. CONTROL MEASURE INSPECTIONS SHALL BE MADE WITHIN 24 HOURS OF RAIN EVENTS GREATER THAN 0.50 INCH. THE QUALITY OF STORMWATER DISCHARGES SHALL BE OBSERVED AND RECORDED. PLACEMENT AND INSTALLATION OF EROSION CONTROL DEVICES AND GROUND STABILIZATION - EROSION CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE AND SHALL BE CONSTRUCTED AND MAINTAINED IN THE ACCORDANCE WITH THE MINIMUM STANDARDS OF THE NC EROSION AND SEDIMENT CONTROL HANDBOOK. DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ALL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PERMITTING AGENCY OR ENGINEER, REGARDLESS OF WHETHER THEY UNIT, PAYMENT OR INCIDENTAL ITEMS. AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED OR SOODED AND STABILIZED WITH 14 DAYS OF INITIAL DISTURBANCE.
- DEWATERING WORK - DURING DEWATERING OPERATIONS FOR PITS, TRENCHES, ETC., WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING DRAINAGE WAY.
- ADDITIONAL PERMITTING - PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS, STAGING OR STORAGE AREAS) CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NCDENR LAND QUALITY SECTION FOR APPROVAL. CONTRACTOR SHALL PAY FEES REQUIRED AND INSTALL NECESSARY MEASURES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE OWNER AND ENGINEER WITH A COPY OF PERMIT AMENDMENT.
- FINAL STABILIZATION, REMOVAL & INSPECTION - UPON ESTABLISHING STABILIZATION AND PERMANENT GROUND COVER, TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR AFTER FINAL INSPECTION BY NCDENR AND ENGINEER.

GENERAL CONSTRUCTION SEQUENCE

- CONSTRUCT TEMPORARY GRAVEL ENTRANCES AT ALL LOCATIONS WHERE CONSTRUCTION EQUIPMENT WILL ENTER AND EXIT PAVED ROADWAYS TO PROJECT WORK AND STAGING AREAS.
- SCHEDULE MATERIAL AND EQUIPMENT DELIVERIES.
- INSTALL PERIMETER EROSION CONTROLS DEVICES.
- CLEAR CORRIDOR SECTION FOR PIPELINE INSTALLATION.
- DELIVER AND INSTALLATION SECTION PIPELINE AND APPURTENANCES.
- RESTORE INSTALLED PIPELINE SECTION DAILY WITH TEMPORARY AND PERMANENT MEASURES AS REQUIRED.
- GROUND COVER SHALL BE ESTABLISHED WITHIN 14 DAYS.
- MAINTAIN EROSION CONTROL DEVICES UNTIL DISTURBED GROUND STABILIZATION COMPLETE.
- COMPLETE PRESSURE TESTING, DISINFECTION, FLUSHING AND BACTERIOLOGICAL TESTING.
- REQUEST SUBSTANTIAL COMPLETION INSPECTION.
- COMPLETE PUNCHLIST.
- REQUEST FINAL COMPLETION INSPECTION.
- CLOSEOUT PROJECT.

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KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	JCL	DRAWN BY	JCL	CHECKED BY	WJH
018005007	09/14/2020								

EROSION CONTROL PLAN

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE

NEW HANOVER COUNTY NORTH CAROLINA

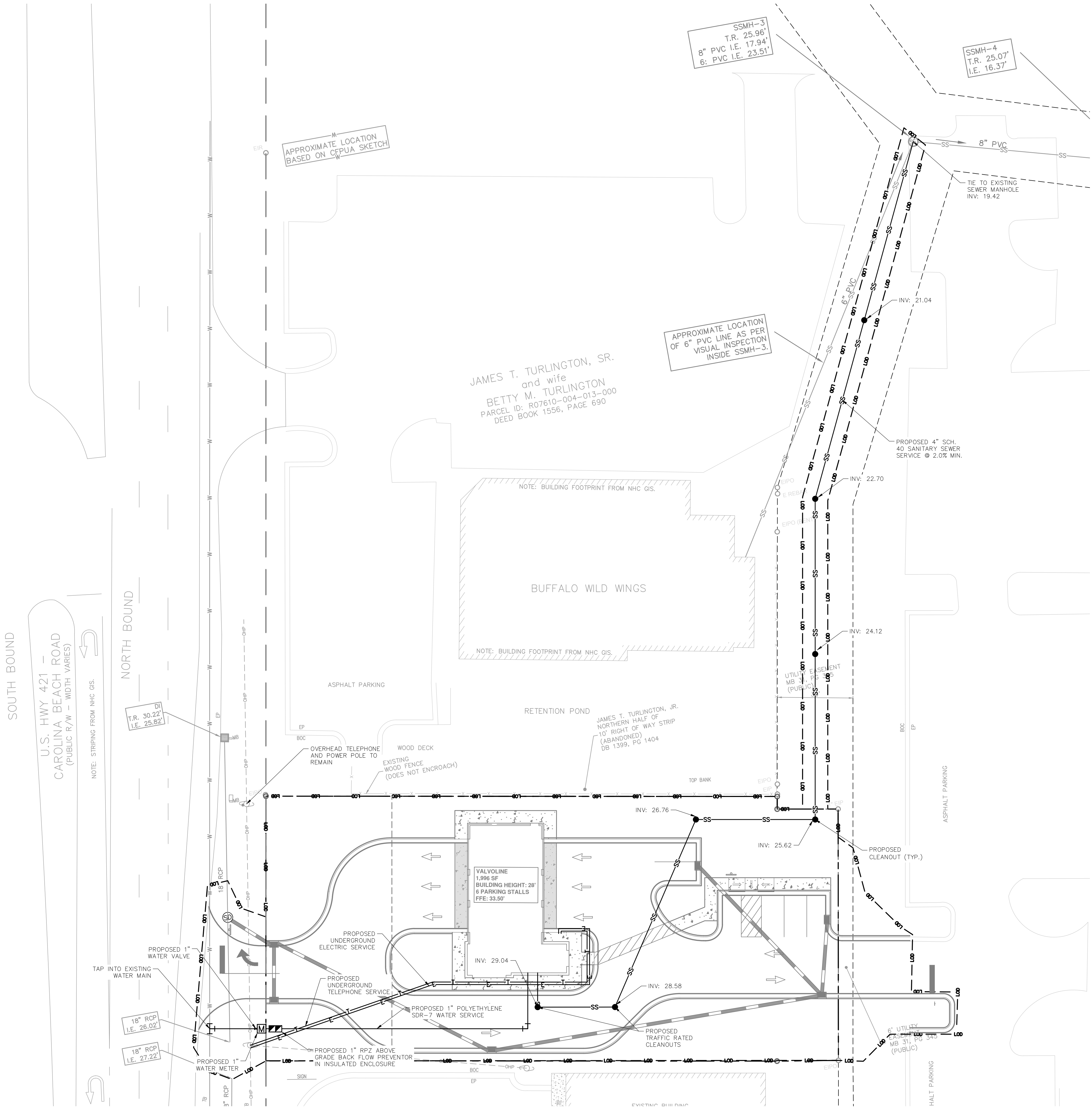
SHEET NUMBER

C4.0

NO. BY DATE

REVISIONS

Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH Layout: C5.0 UTILITY PLAN September 11, 2020 04:40:44pm K:\RAL-LDEVA\018652007_valvoline carolina beach\planning phase\p18_cood files\plansheets\C5.0 UTILITY PLAN.dwg
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UTILITY LEGEND

---	L.O.D.	---	LIMITS OF DISTURBANCE
---	W	---	PROPOSED WATER LINE
---	W	---	EXISTING WATER LINE
---	SS	---	PROPOSED SANITARY SEWER LINE
---	SS	---	EXISTING SANITARY SEWER LINE
M			WATER METER
▨			BACKFLOW PREVENTOR
•			SANITARY SEWER CLEANOUT
SS			EXISTING SANITARY SEWER MANHOLE

UTILITY NOTE: ALL UTILITIES, BOTH PUBLIC AND PRIVATE, SHALL BE UNDERGROUND

SEWER AND WATER CAPACITY

SEWER:	0 GPD (CURRENT USE)
SEWER:	150 GPD (PROPOSED USE)
	25 GAL/PERSON
WATER:	0 GPD (CURRENT USE)
WATER:	210 GPD (PROPOSED USE)
	140% OF SEWER USAGE

GRAPHIC SCALE IN FEET
0 10 20 40

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VERTICAL DATUM: NAVD 1988

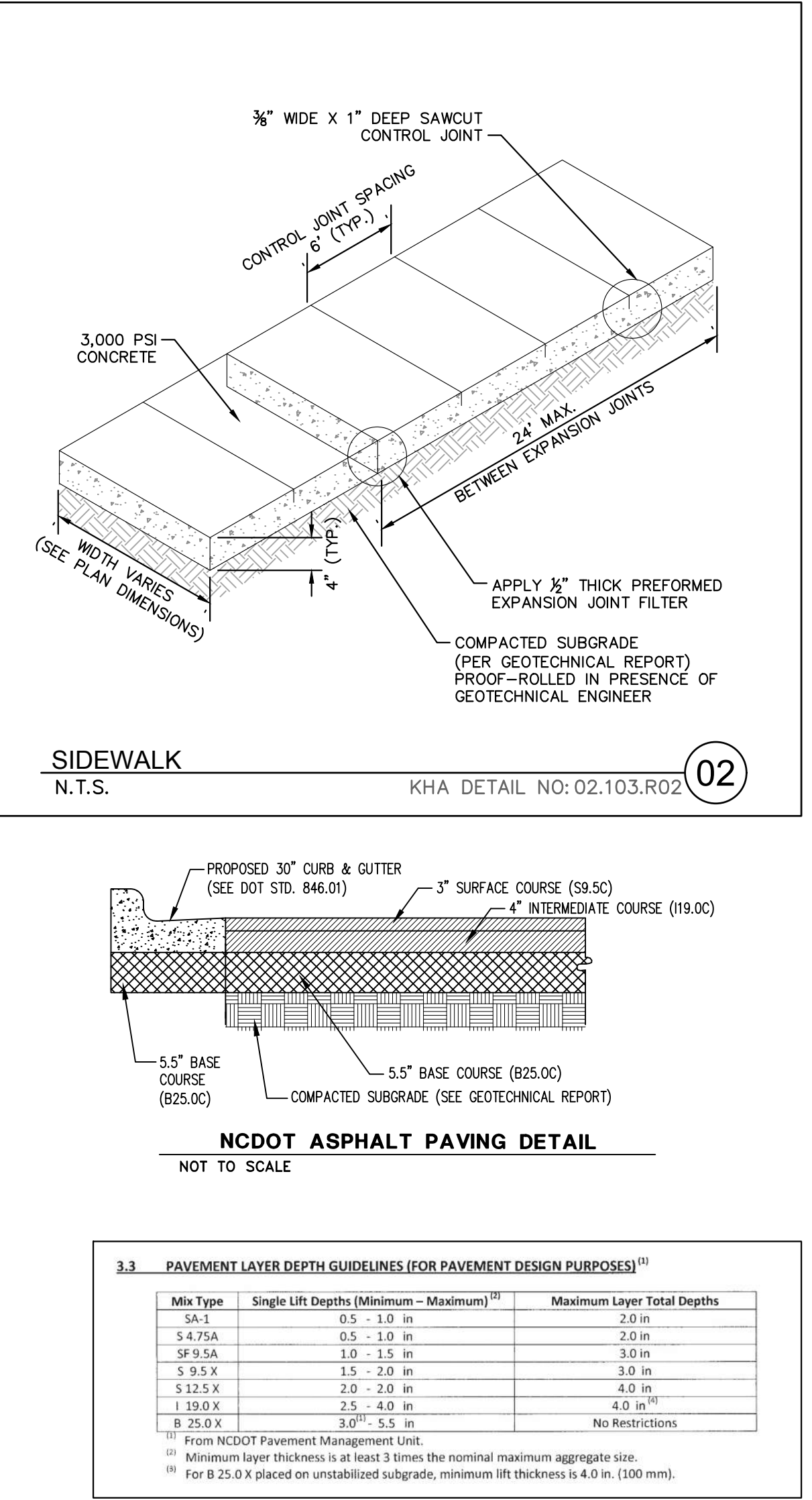
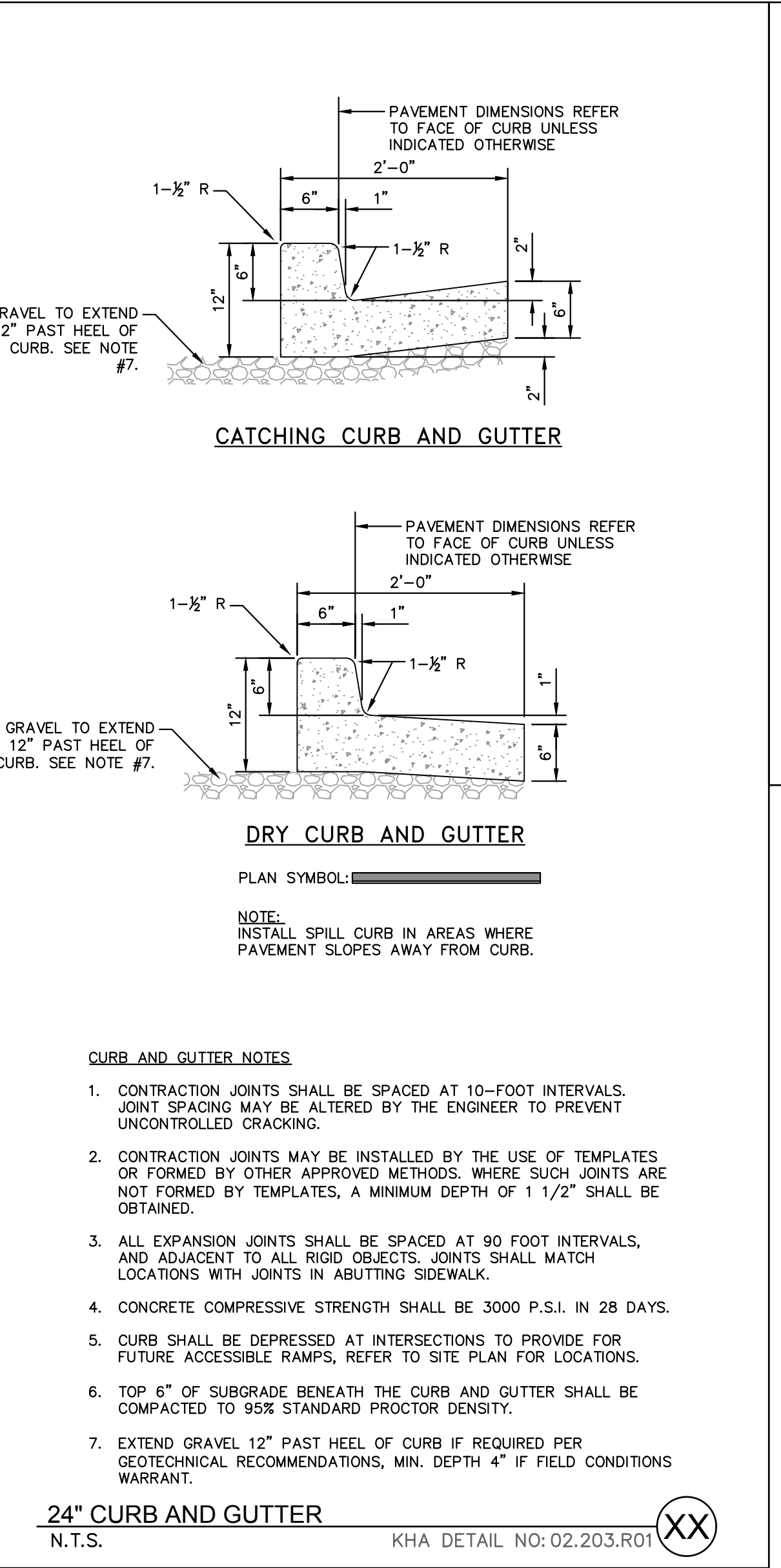
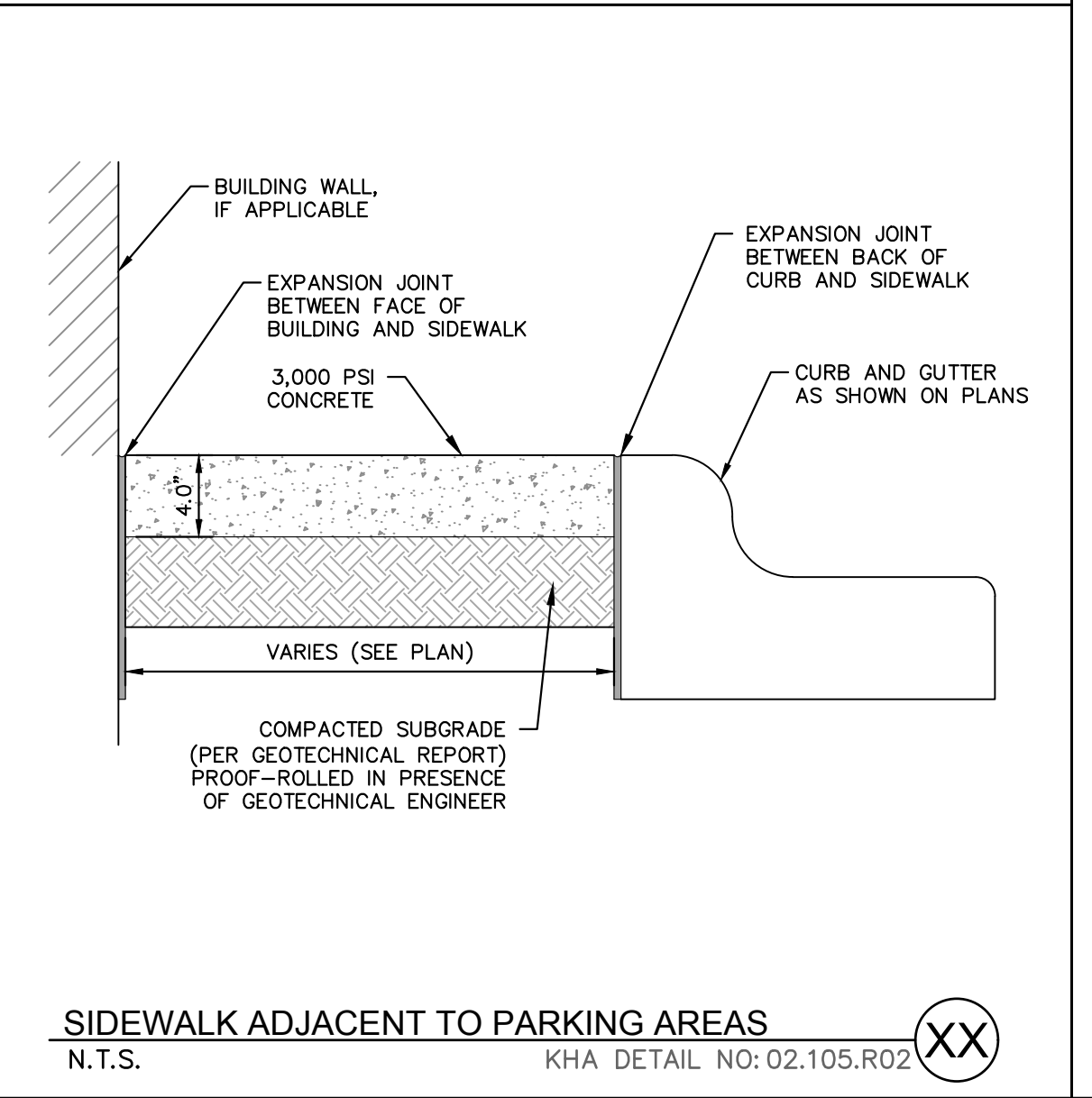
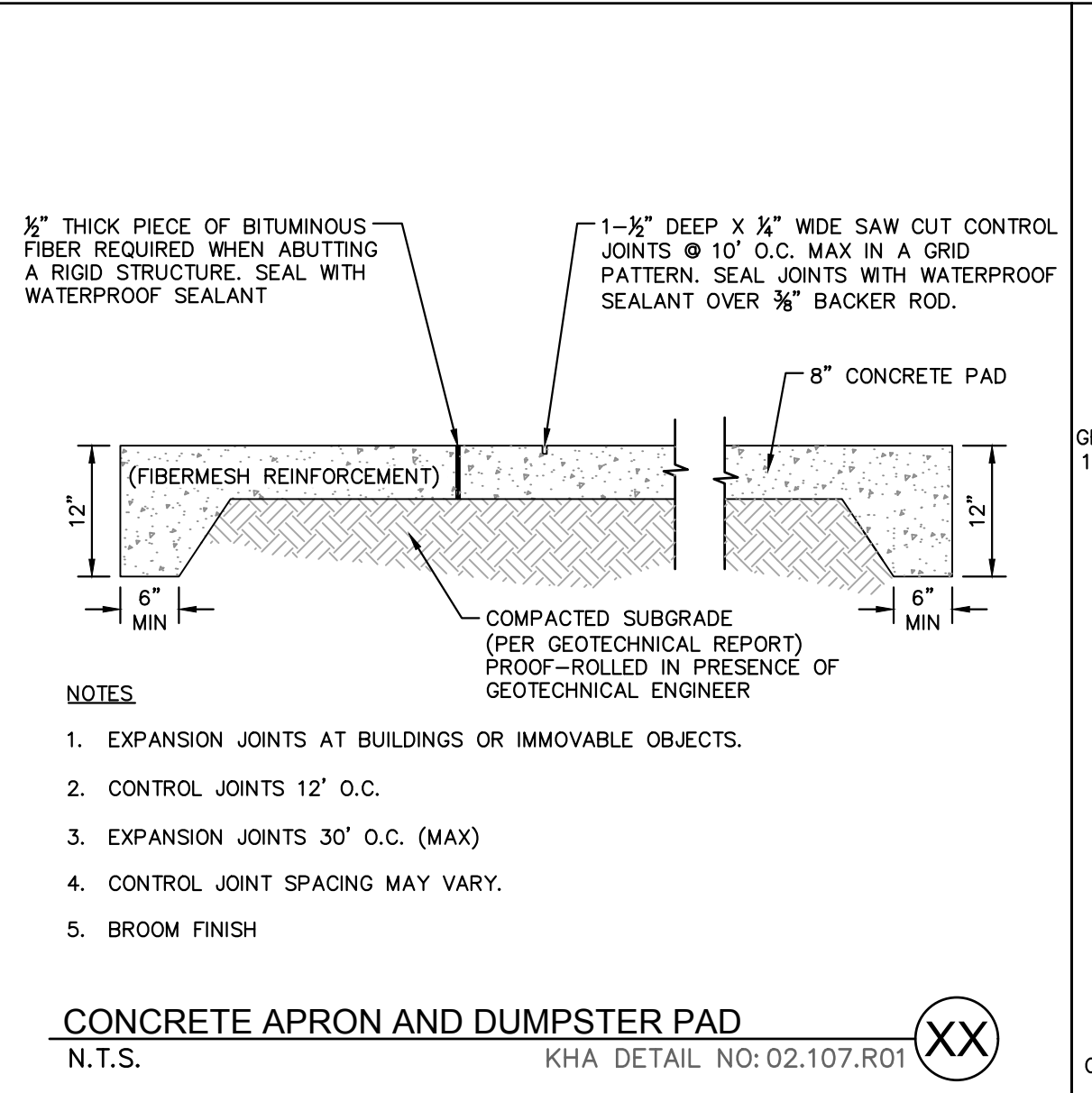
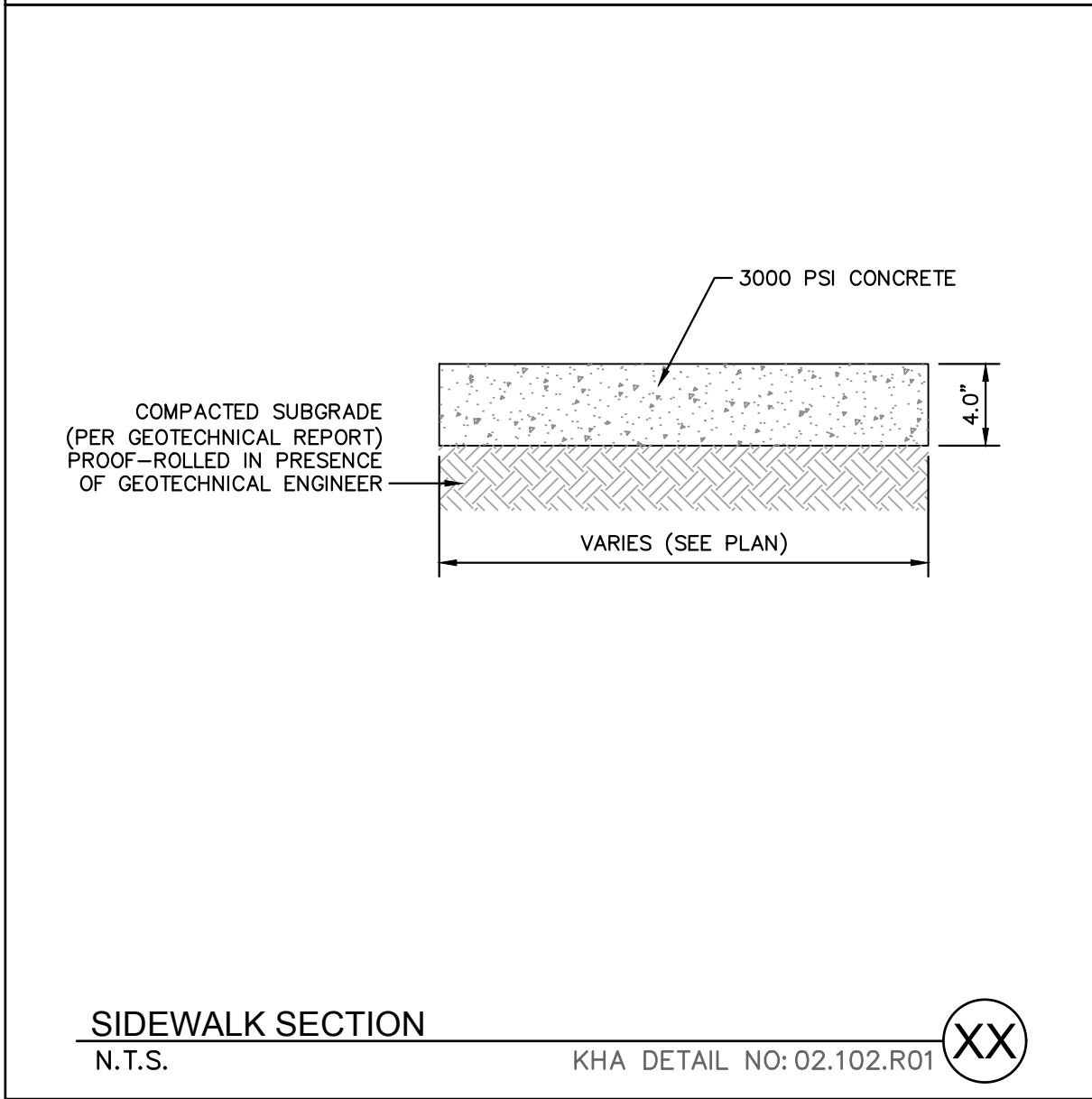
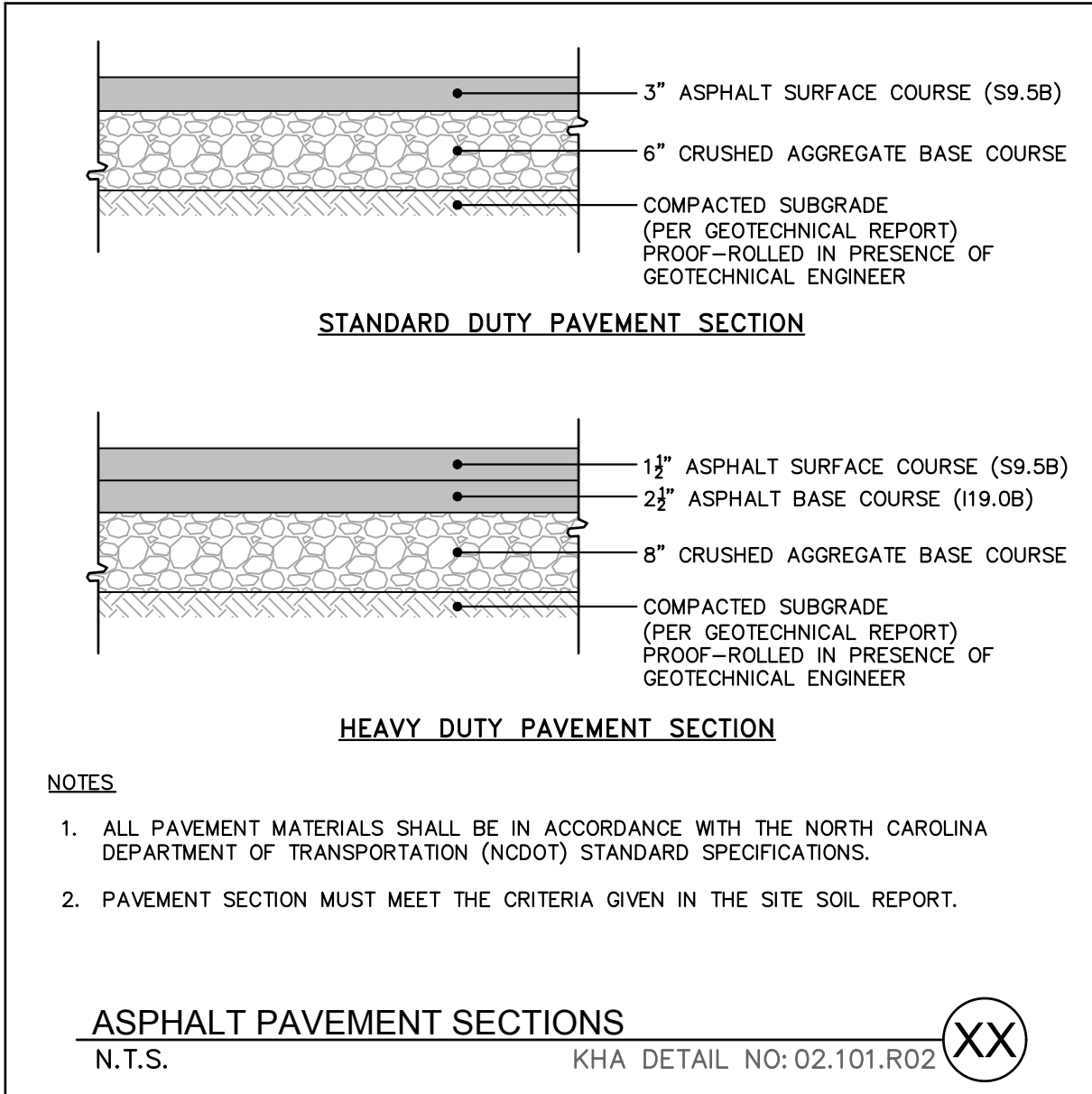
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KHA PROJECT 018005007		DATE 09/14/2020		SCALE AS SHOWN		DESIGNED BY JCL		DRAWN BY JCL		CHECKED BY WHL	
UTILITY PLAN											
VALVOLINE CAROLINA BEACH PREPARED FOR VALVOLINE NEW HANOVER COUNTY NORTH CAROLINA											
SHEET NUMBER C5.0											

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No.	DATE	

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ALL EXISTING TOPOGRAPHICAL BOUNDARY, TREE INFORMATION WAS PROVIDED WITHIN A TOPOGRAPHICAL SURVEY PREPARED BY DANFORD & ASSOCIATES, 4002 1/2 OLEANDER DRIVE SUITE 203, WILMINGTON, NC, 28403, ON 08/11/20.
HORIZONTAL DATUM: NAD83 (2011)
VERTICAL DATUM: NAVD 1988

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCDEQ, NEW HANOVER COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS; MORE STRINGENT SHALL GOVERN.

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE
NORTH CAROLINA

SHEET NUMBER
C6.1

Kimley»Horn

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421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
PHONE: 919-677-2000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM
#P-0102

KHA PROJECT
018005007

DATE
09/14/2020

SCALE AS SHOWN

DESIGNED BY JCL

DRAWN BY JCL

CHECKED BY WHH

SITE DETAILS

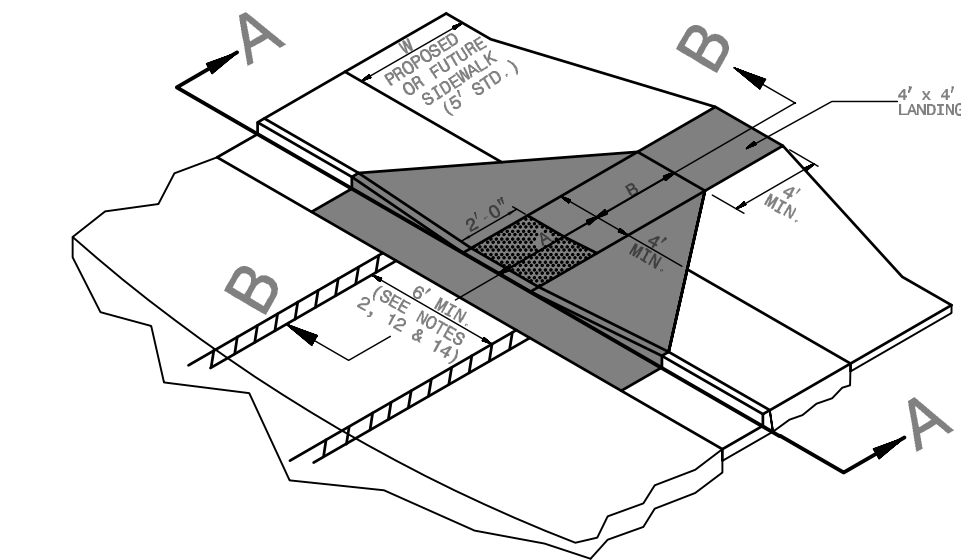
REVISIONS

BY

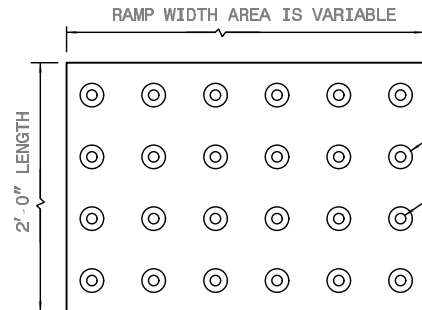
DATE

LIMITS OF DISTURBANCE: 0.70 AC

Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH Layout: C6.2 SITE DETAILS September 11, 2020 04:40:50pm K:\VAL_LDEV\018852007_valvoline carolina beach\planning phase\p15_cad files\plansheets\C6.0 SITE DETAILS.dwg This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

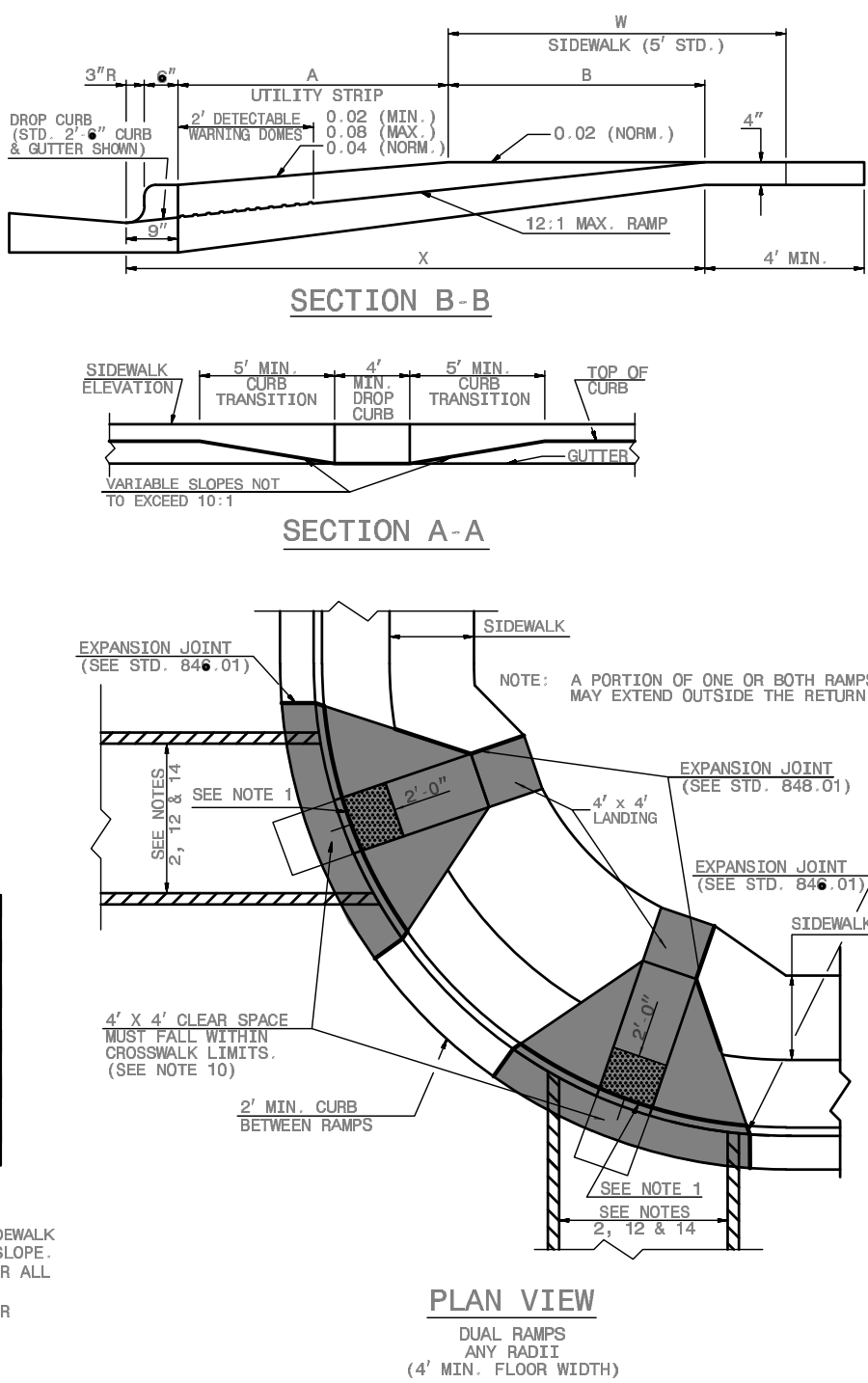


- NOTES:
1. DETECTABLE WARNING DOMES WILL COVER 2' 0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT ON DARK, OR DARK ON LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



W	A	B	X	B
6'	0.0'	8.0'	8.0'	8.0'
7'	0.0'	7.8'	7.3'	6.5'
8'	0.0'	6.8'	7.3'	6.5'
9'	2.0'	7.8'	7.8'	6.0'
10'	2.5'	8.3'	8.1'	4.8'
11'	3.0'	8.8'	8.3'	4.4'
12'	3.5'	9.3'	8.4'	4.1'
13'	4.0'	9.8'	8.5'	3.8'
14'	4.5'	10.3'	8.7'	3.4'
15'	5.0'	10.8'	8.9'	3.1'

B = X (A+B)
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8:2.5%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



DETECTABLE WARNING DOMES

- NOTES:
1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
 2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
 3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
 4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
 5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
 6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
 7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
 8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.3% MAXIMUM.
 9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
 10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
 11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
 12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
 13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGH THE ISLAND.
 14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'x5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
 15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
 16. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
 17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
 18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

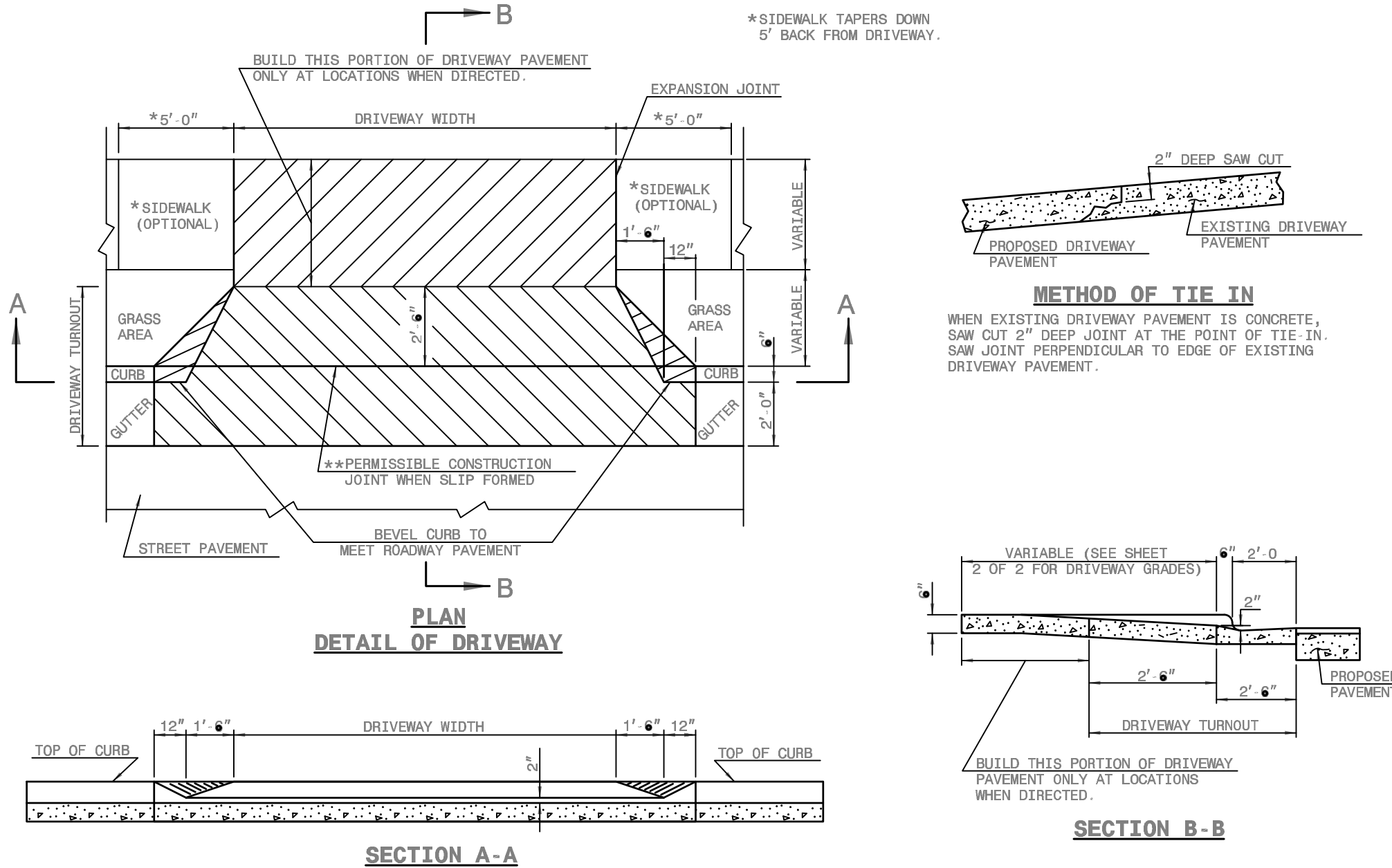
ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 1 OF 3
848.05

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

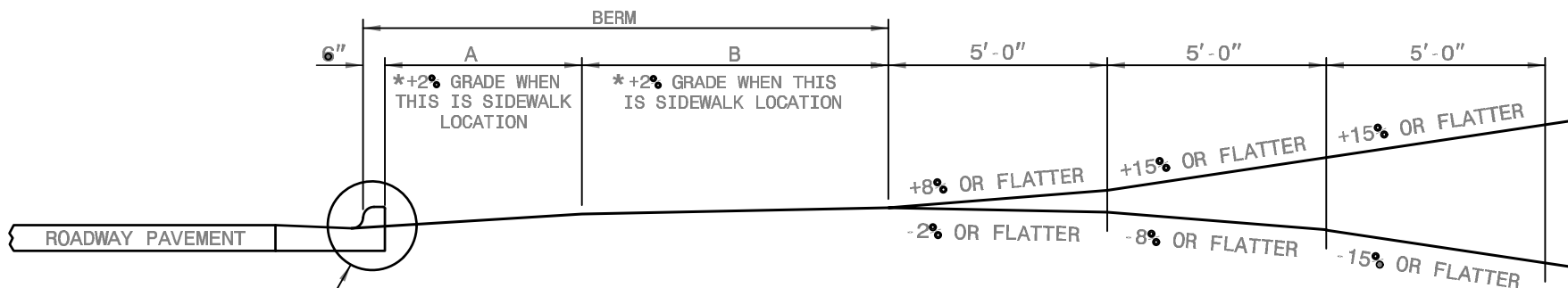
ROADWAY STANDARD DRAWING FOR
CURB RAMPS
NOTES

SHEET 3 OF 3
848.05



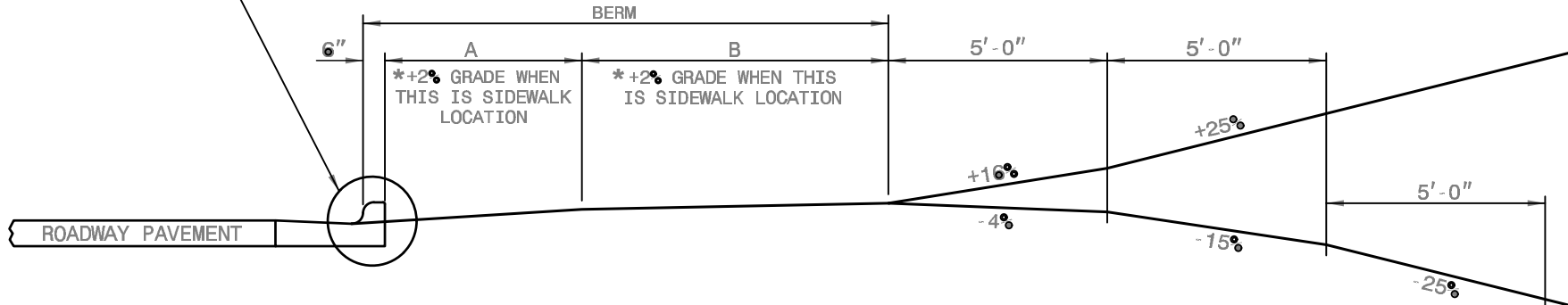
GENERAL NOTES:
***NO CONSTRUCTION JOINT WILL BE PERMITTED IF FORMS ARE USED TO CAST DRIVEWAY. SLIP FORMING OF CURB AND GUTTER PERMITS THE USE OF CONSTRUCTION JOINT.

DESIRABLE DRIVEWAY GRADES



DESIRABLE OR MAXIMUM DRIVEWAY GRADES				
BERM WIDTH	A		B	
	DIST	GRADE	DIST	GRADE
8' OR LESS	5' 0"	+2%	2' 6"	+5%
8' OR LESS	2' 0"	+8%	5' 6"	+2%
10'	4' 0"	+4%	5' 6"	+2%
12' & OVER	4' 6"	+4%	7' 0"	+2%

MAXIMUM DRIVEWAY GRADES



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT
DROP CURB TYPE

SHEET 1 OF 2
848.03

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT
DRIVEWAY GRADES

SHEET 2 OF 2
848.03



Know what's below.
Call before you dig.

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LIMITS OF DISTURBANCE: 0.70 AC

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE
NEW HANOVER
COUNTY

SHEET NUMBER
C6.2

Kimley»Horn

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PHONE: 919-677-2000 FAX: 919-677-2050
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DATE
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DESIGNED BY JCL
DRAWN BY JCL
CHECKED BY WHH

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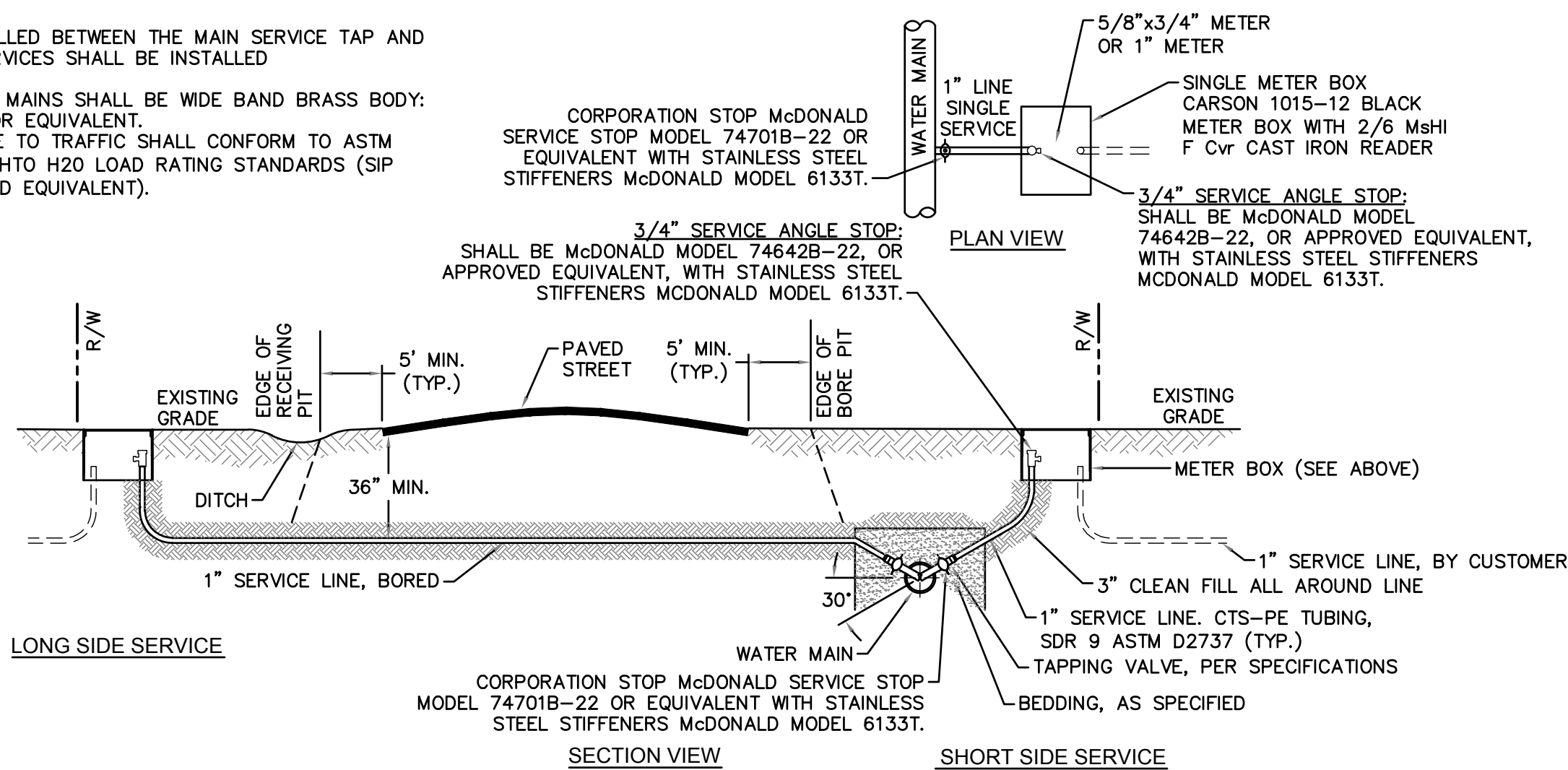
NORTH CAROLINA

REVISIONS
No. DATE BY

Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH - Layout: C8.0 UTILITY DETAILS September 11, 2020 04:41:24pm K:\VAL-LEDA\018852007_valvoline carolina beach\plan\phase v15-cad files\plansheets\C8.0 UTILITY DETAILS.dwg
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Stewardship/Valvoline Detail/200 Technical Notes/Revisions/10/1/16/Revision

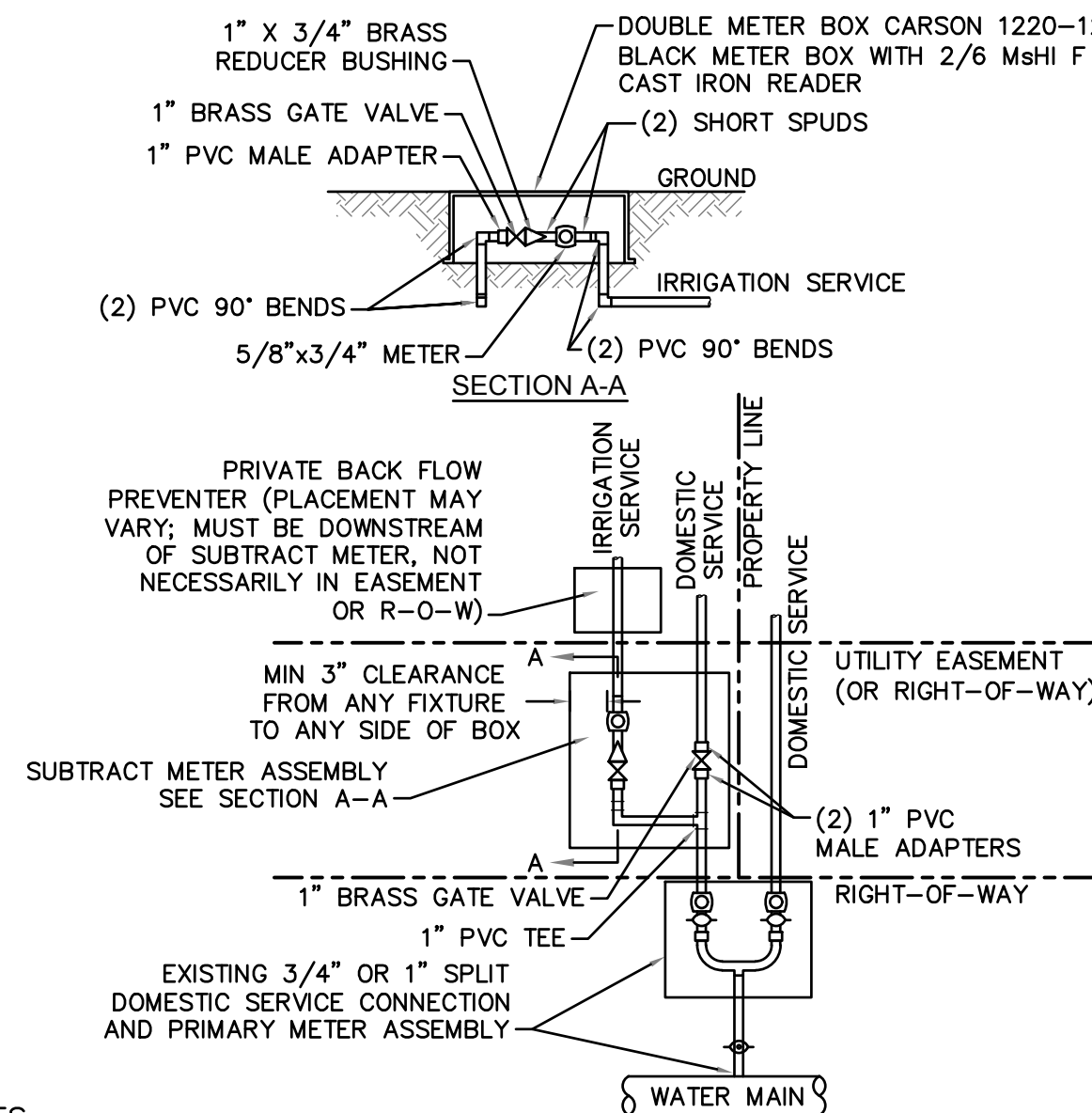
NOTES:

1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



NOTE:
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPWA WATER SYSTEM

WD-18 SINGLE SERVICE CONNECTION
NOT TO SCALE



NOTES:

1. BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPWA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY.
2. ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS.

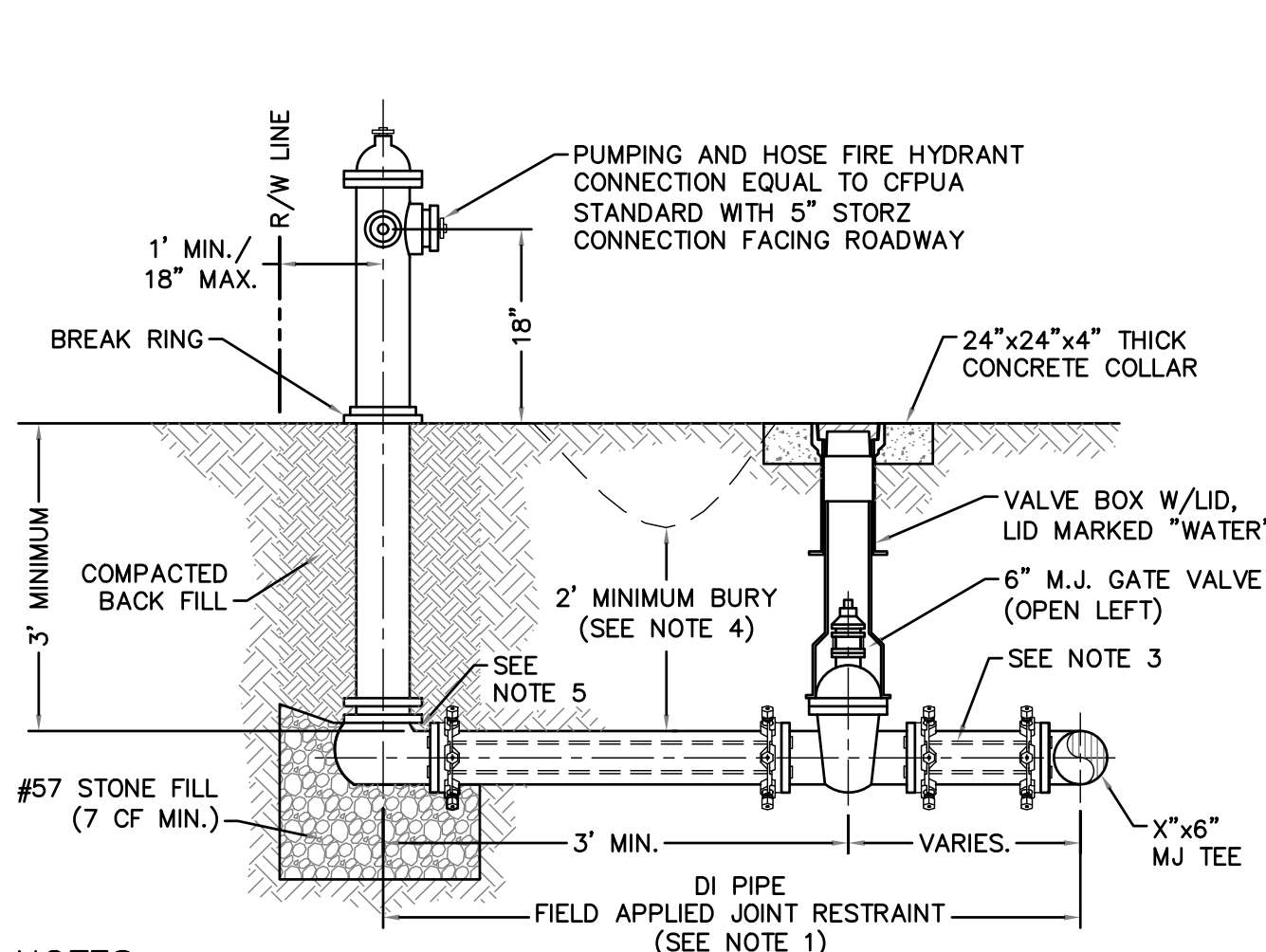
PLAN VIEW

(MULTIPLE DOMESTIC SERVICES PER TAP)

DOUBLE SERVICE CONNECTION
USING SUBTRACT METER

WD-8

NOT TO SCALE



NOTES:

1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
4. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
5. WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

FIRE HYDRANT ASSEMBLY

WD-10

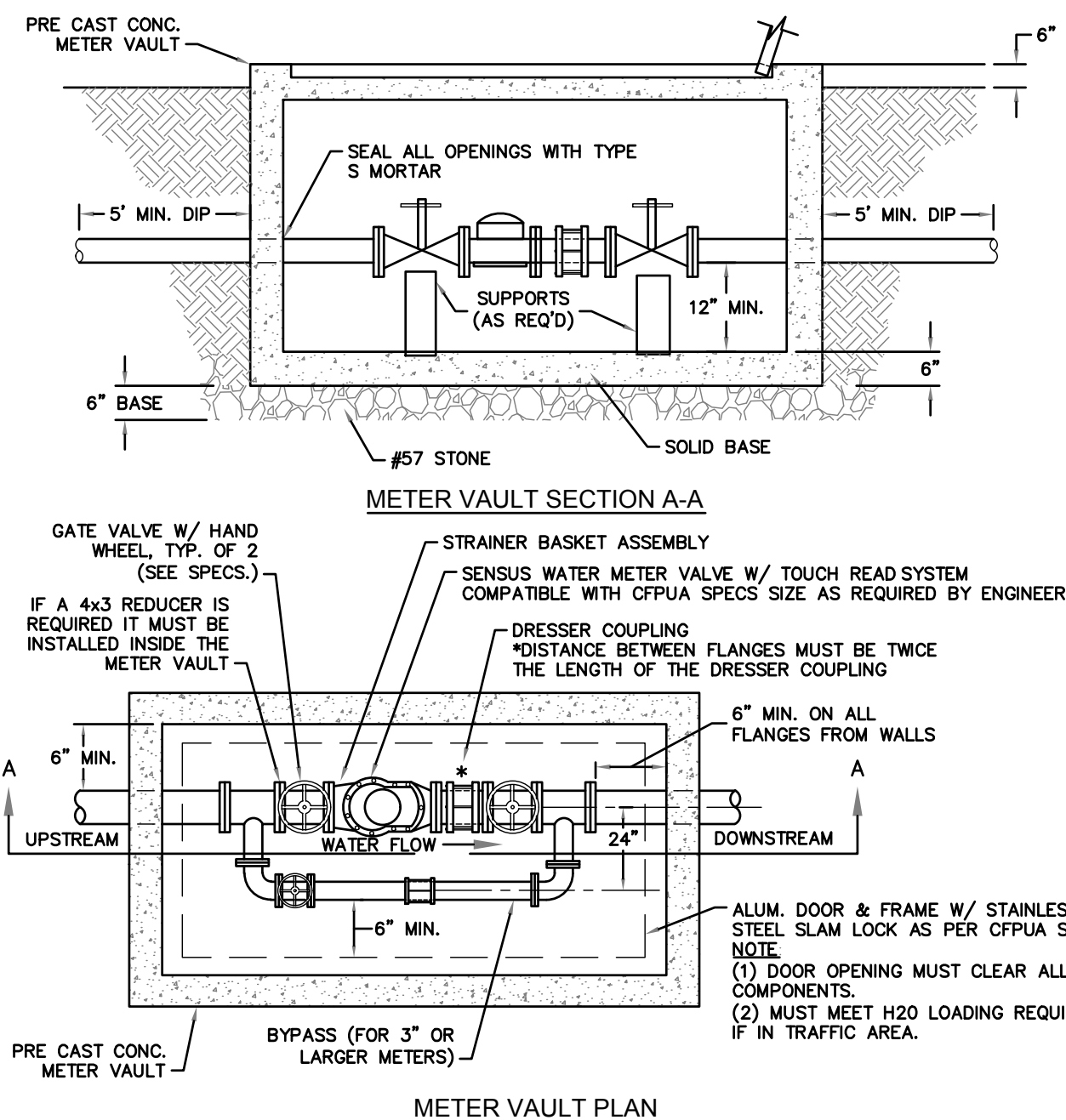
NOT TO SCALE

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
3. ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF GLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.
7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

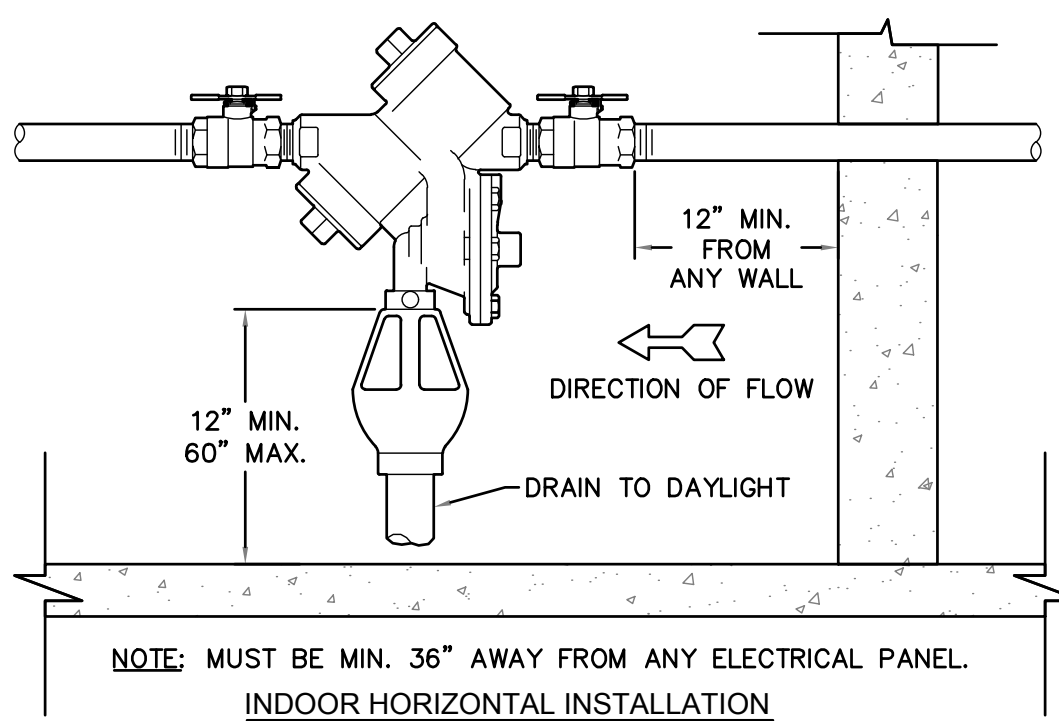
STANDARD NOTES

WD-19 (REQUIRED ON ALL PLAN AND PROFILE SHEETS)



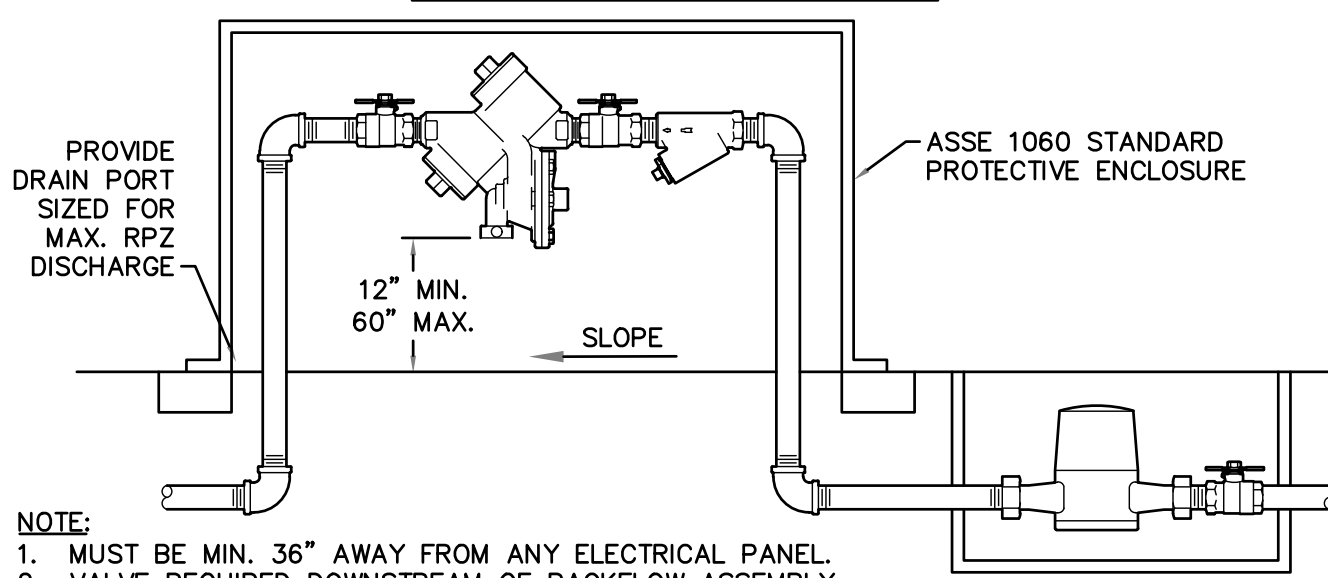
METER VAULT PLAN
FOR WATER METERS LARGER THAN 2"

WD-1 WATER METER VAULT
NOT TO SCALE



NOTE: MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.

INDOOR HORIZONTAL INSTALLATION



NOTE:

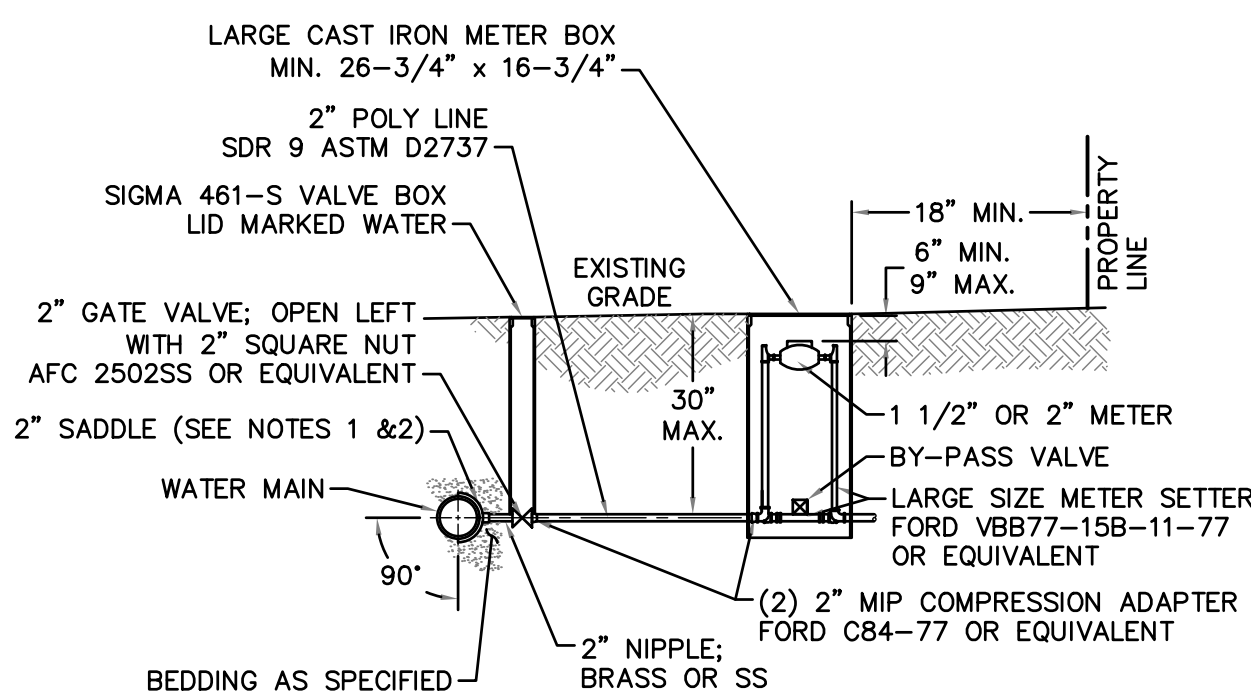
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPWA ESMD FOR APPROVAL.

OUTDOOR HORIZONTAL INSTALLATION

REDUCED PRESSURE PRINCIPLE ASSEMBLY

WD-12

NOT TO SCALE

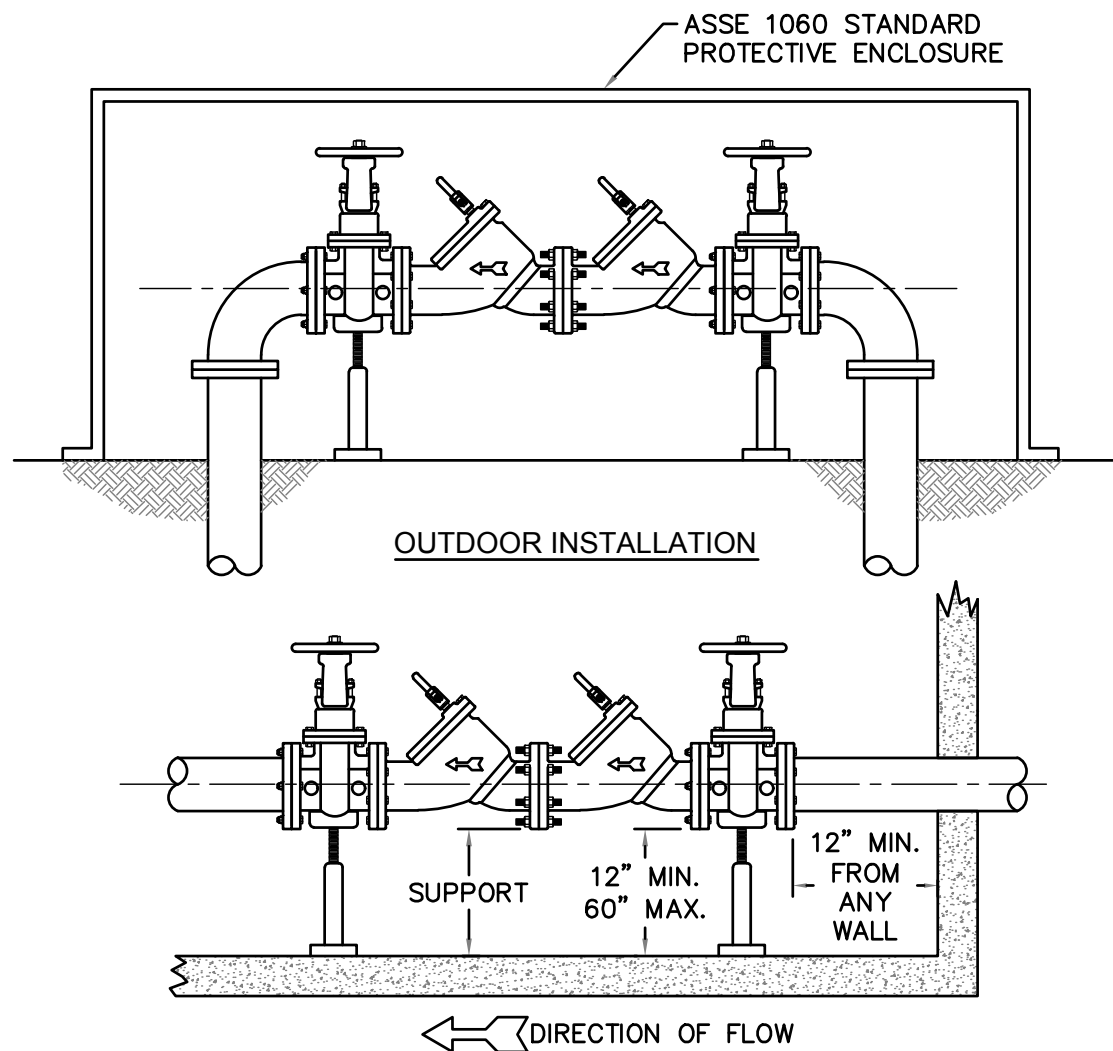


NOTES:

1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCIE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
6. 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.

FOR 1-1/2" OR 2" WATER SERVICES

WD-11 LARGE METER
NOT TO SCALE



- NOTE:
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
 2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
 3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPWA ESMD FOR APPROVAL.

INDOOR INSTALLATION

WD-7 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

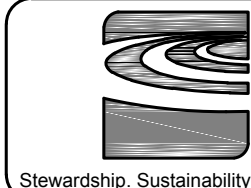
GENERAL NOTES:

1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPWA
WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS



CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE:

1/9/12

SCALE:

N/A

DRAWN BY:

CFPUA

CHECKED BY:

CFPUA

PROJECT NO.:

SHEET NO.:

WSD-1

VALVOLINE

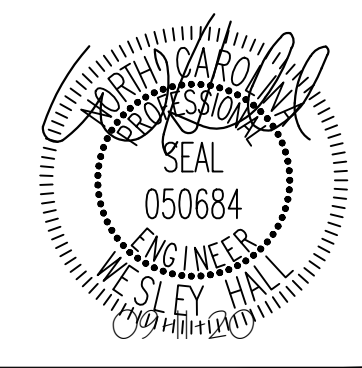
CAROLINA BEACH

PREPARED FOR
VALVOLINE

NEW HANOVER COUNTY

Kimley»Horn

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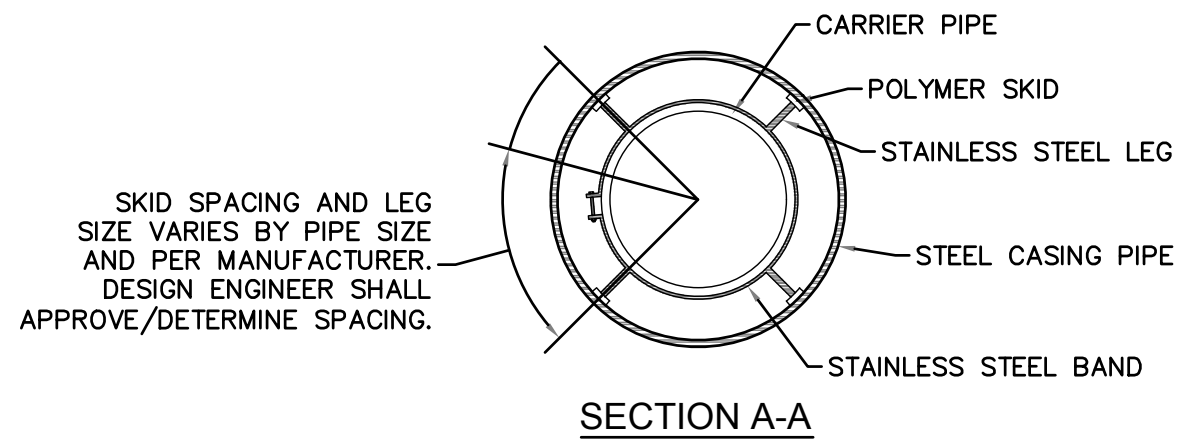
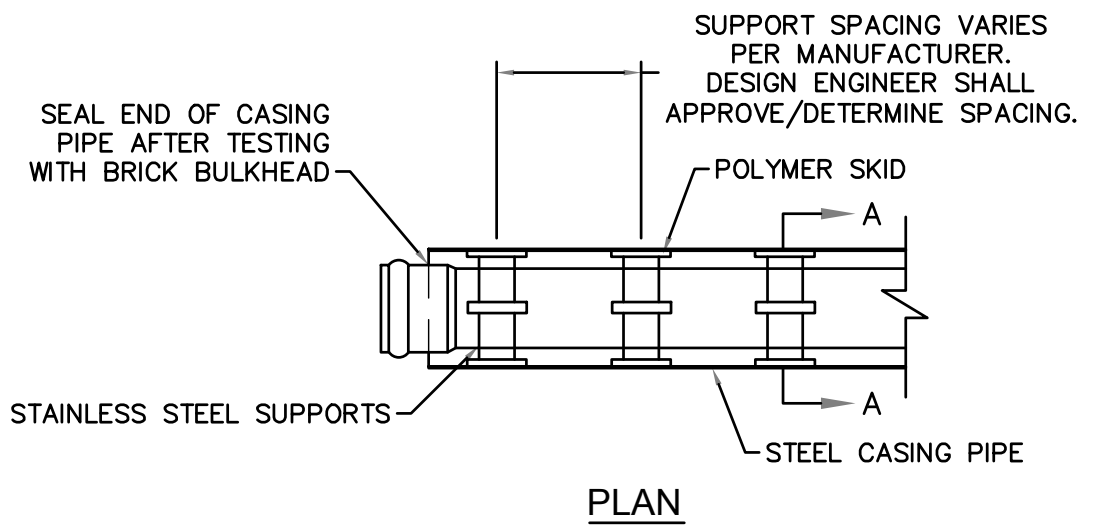
KHA PROJECT
018005007
DATE
09/14/2020
SCALE
AS SHOWN
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JCL
DRAWN BY
JCL
CHECKED BY
WHH

UTILITY DETAILS

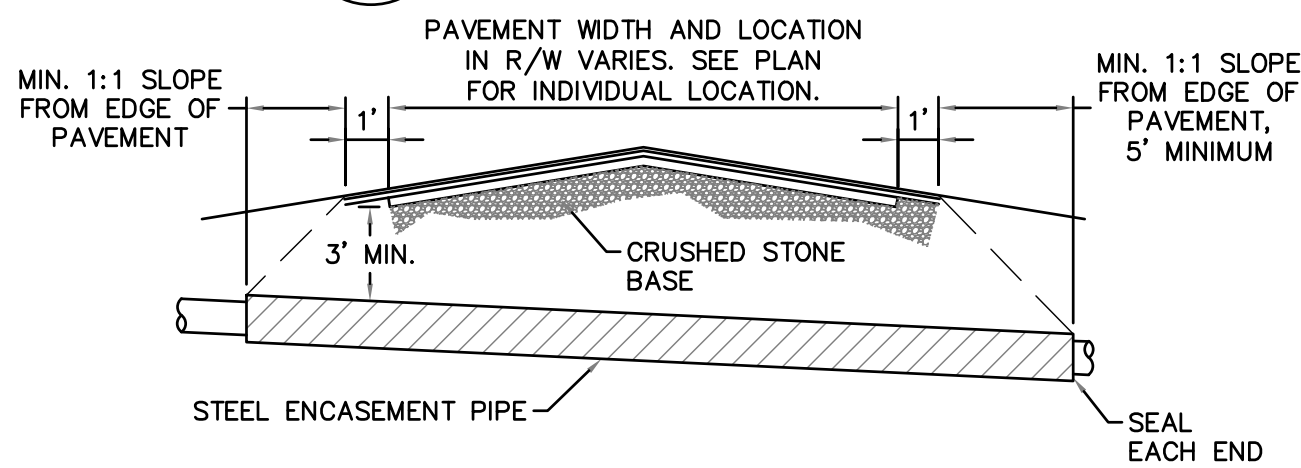
NORTH CAROLINA

SHEET NUMBER
C8.0

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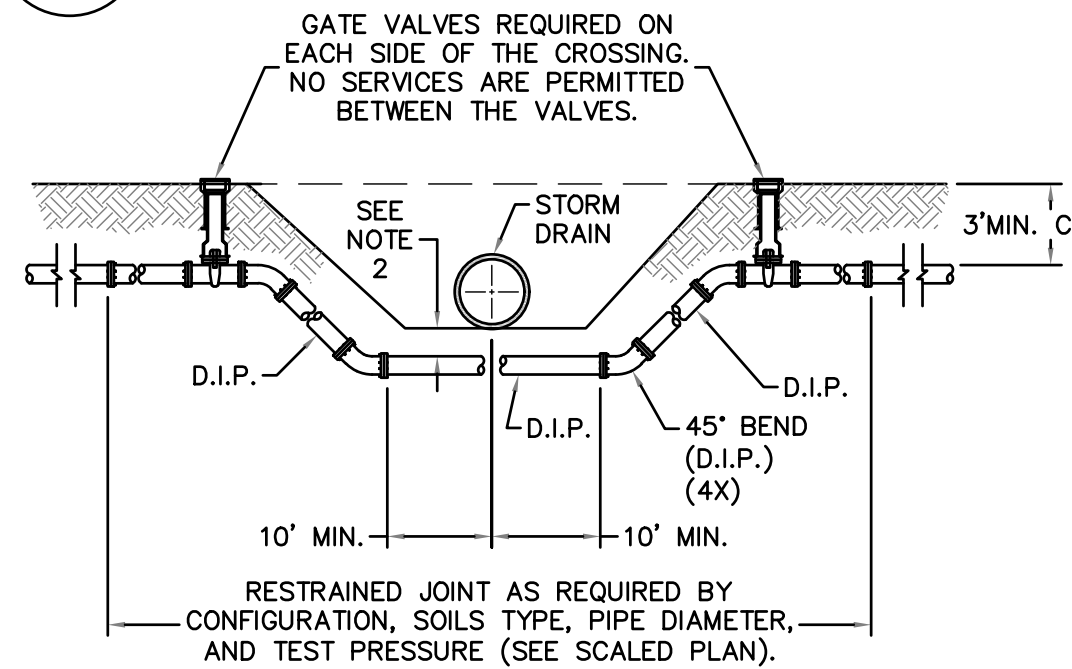


WD-15 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



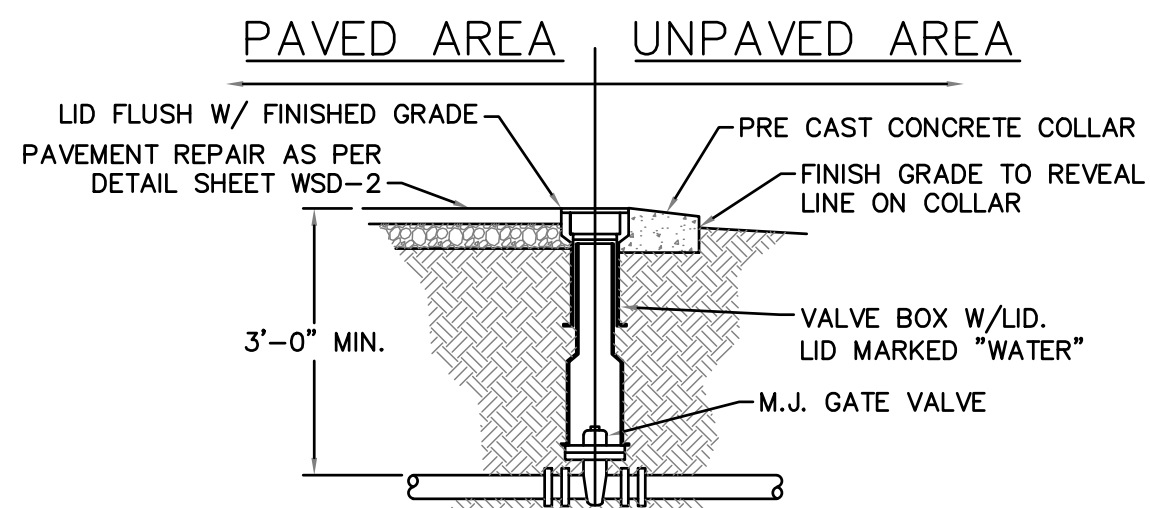
- NOTE: 1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED. 2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

WD-16 TYPICAL BORING/JACKING DETAIL
NOT TO SCALE

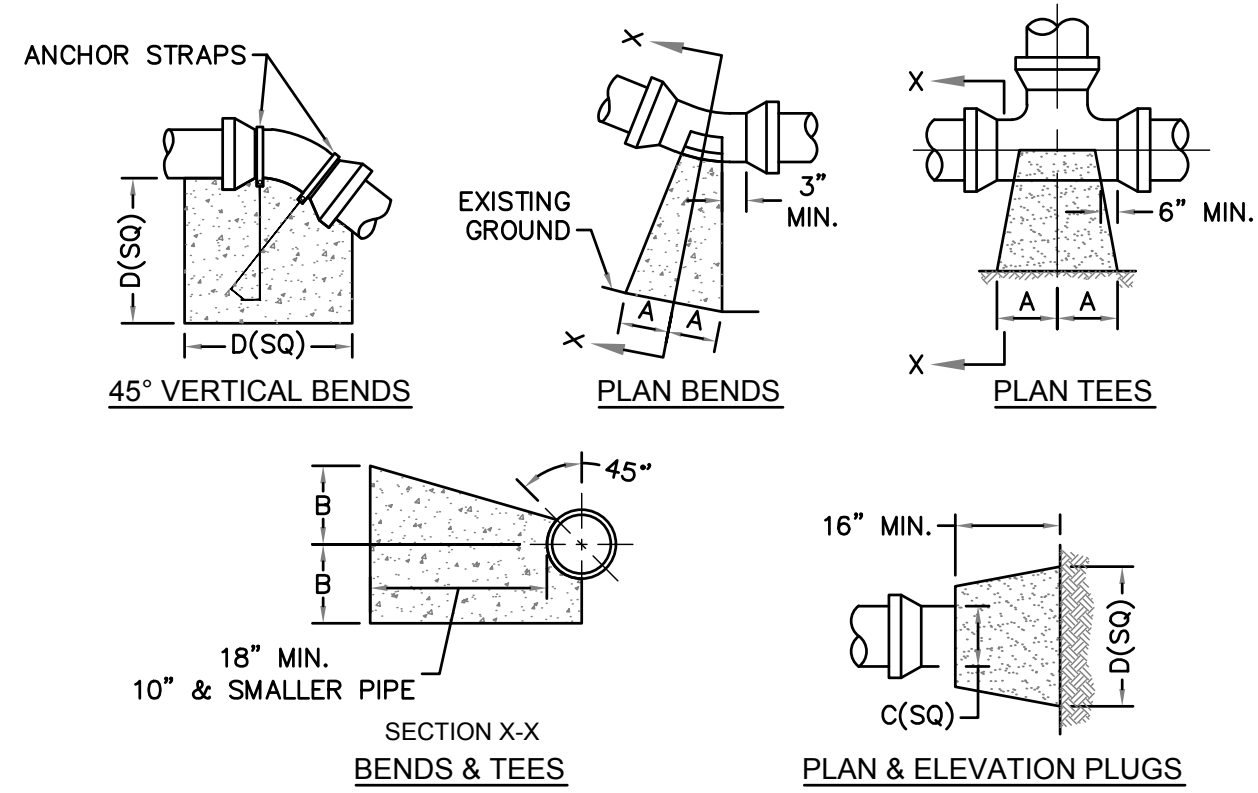


- NOTE: 1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE. 2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPUA: a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE. b. ALL OTHER LOCATIONS, 30" MIN. c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, 18" MIN. CLEARANCE IS REQUIRED.

WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE



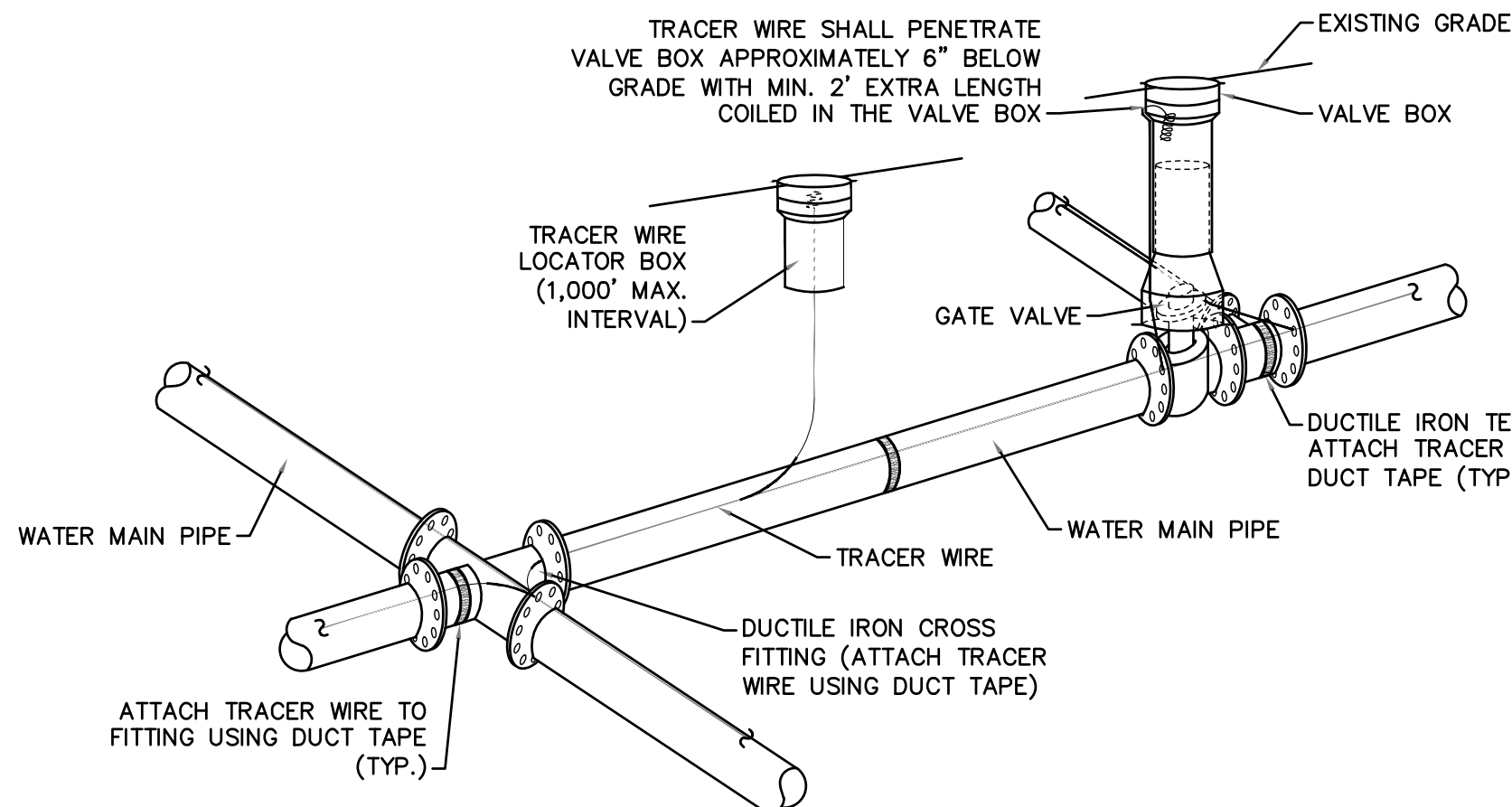
WD-3 VALVE DETAIL
NOT TO SCALE



SIZE	90° BENDS		45° BENDS		22-1/2° BENDS		TEES/PLUGS		45° VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	18"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

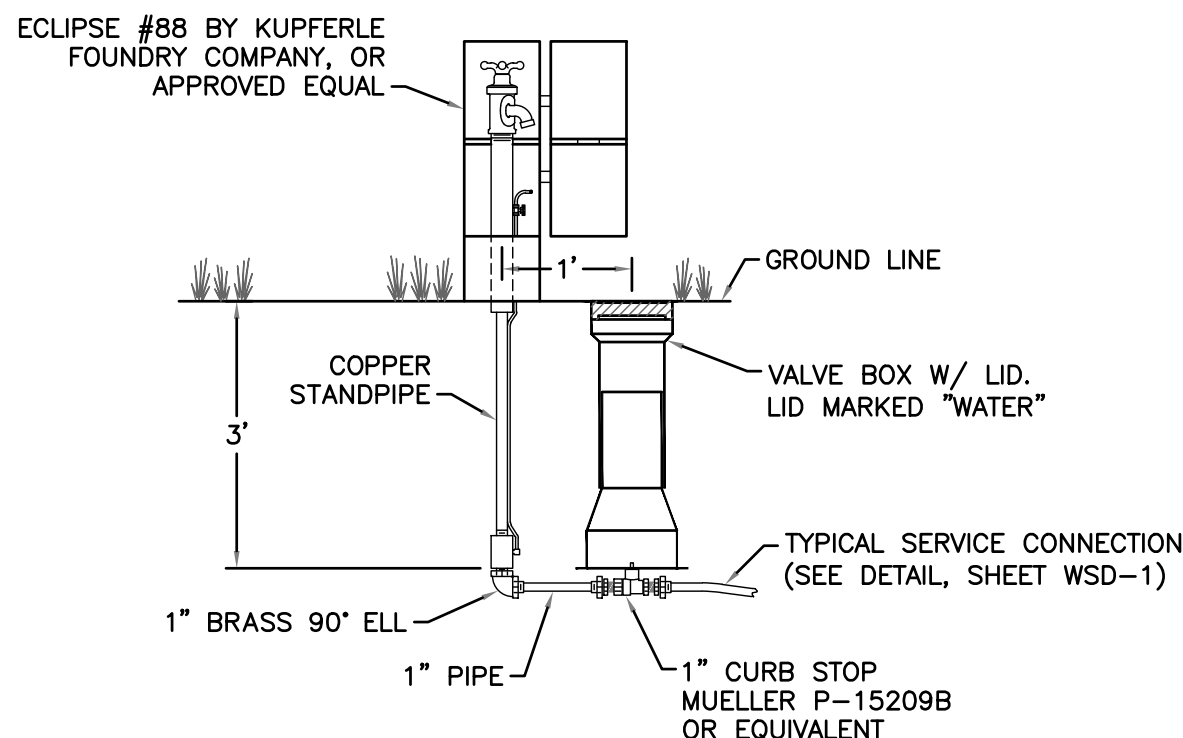
- NOTE: 1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY. 2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND. 3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

WD-4 THRUST BLOCK DETAIL
NOT TO SCALE

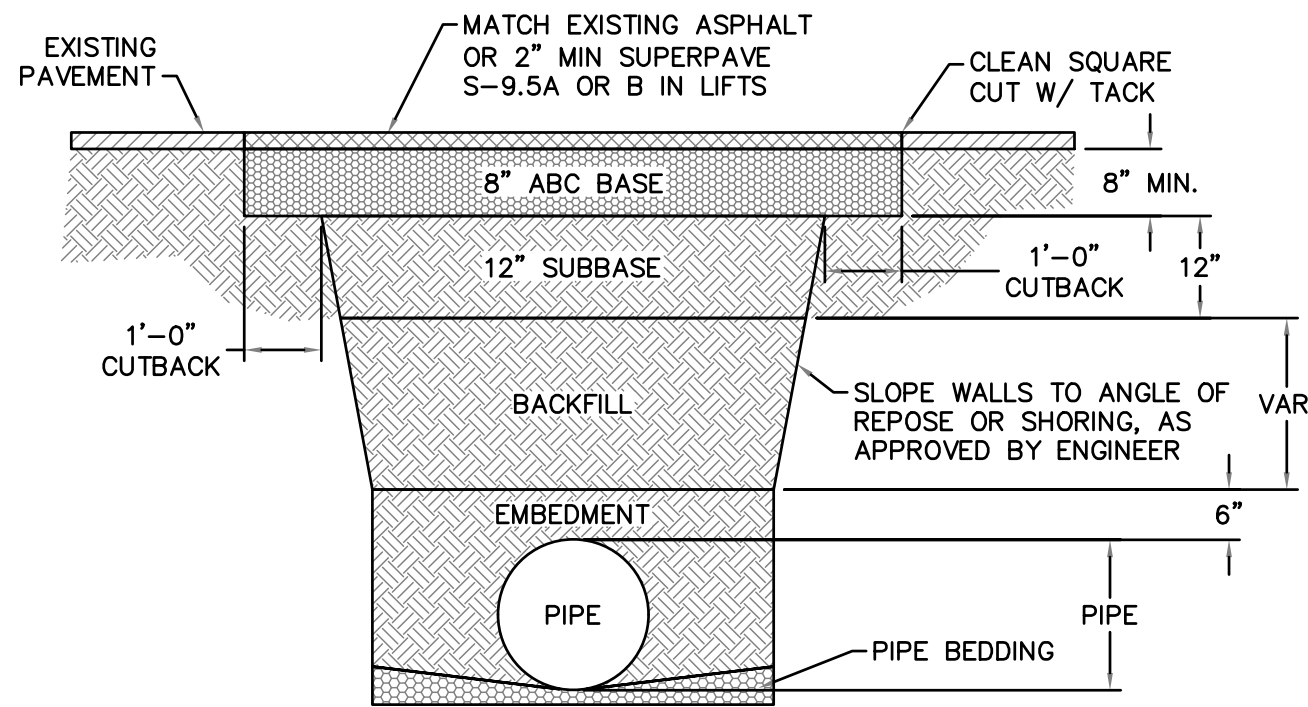


- NOTE: 1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION. 2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE. 3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE. 4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT, AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

WD-17 TRACER WIRE DETAIL
NOT TO SCALE



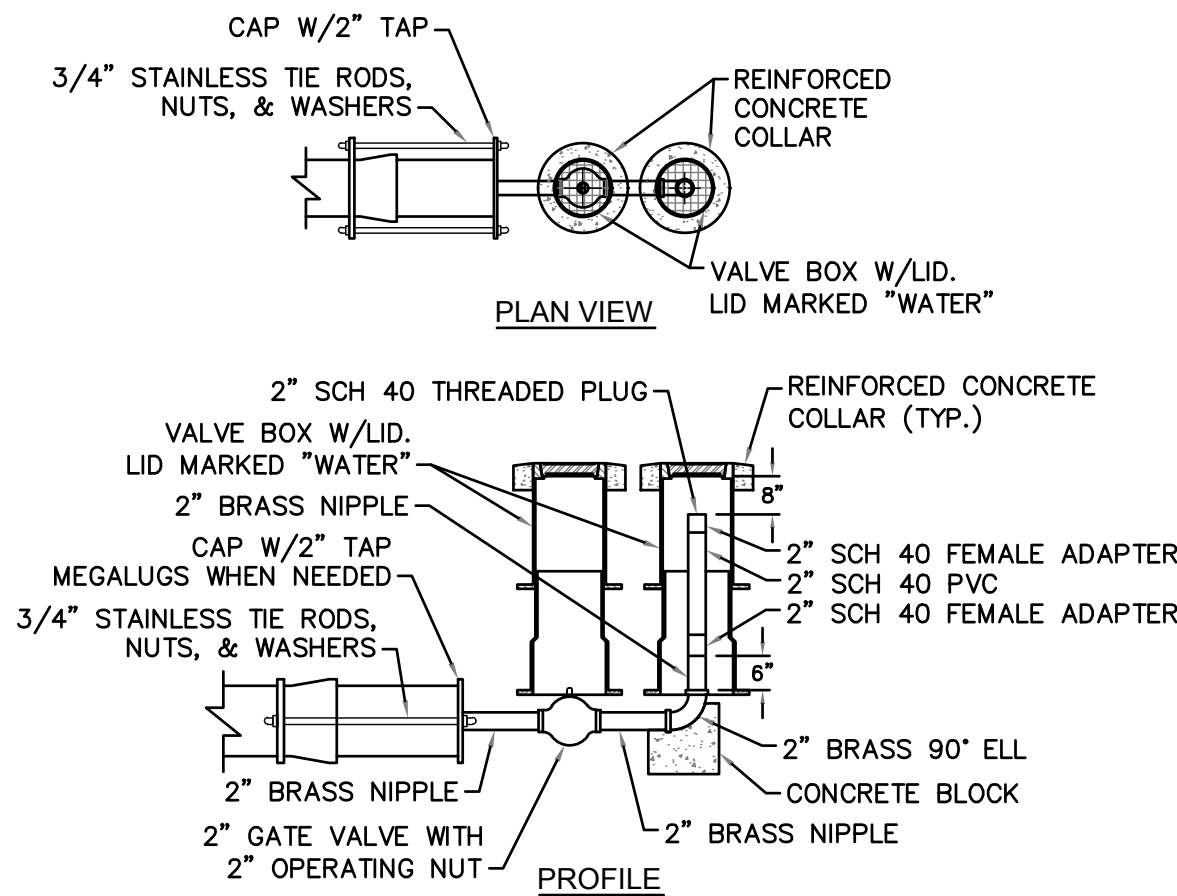
WD-6 SAMPLING STATION
NOT TO SCALE



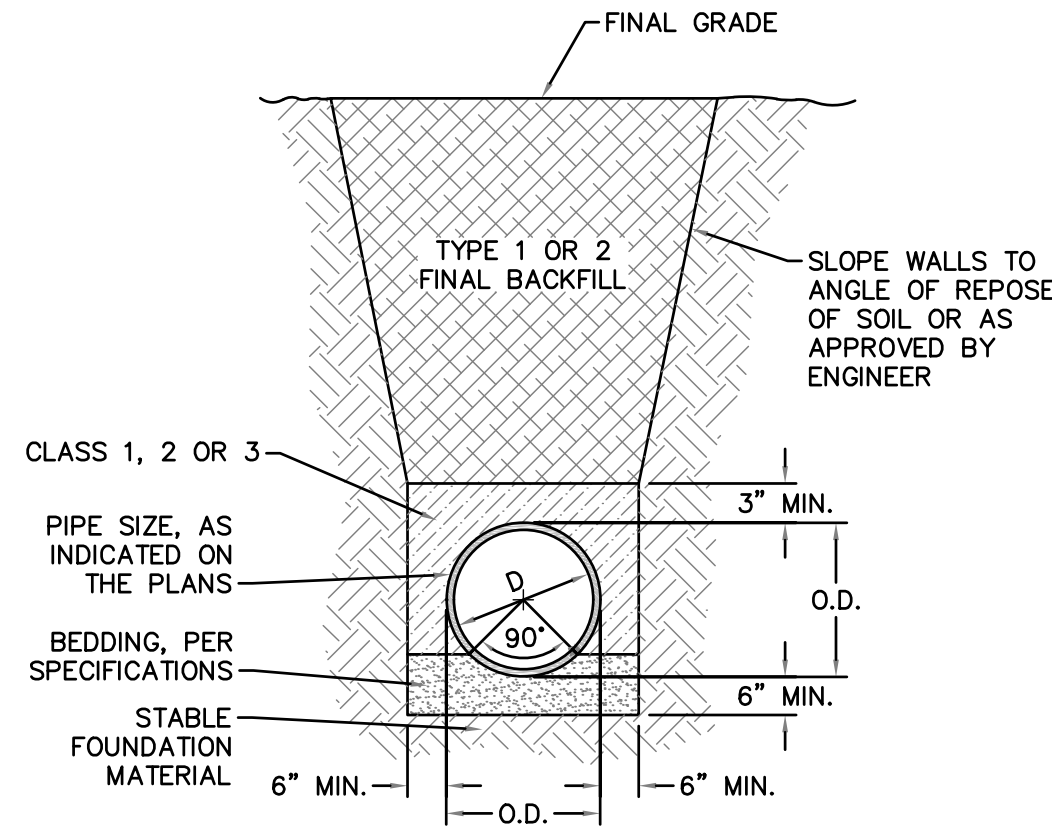
- NOTE: 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBO, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE. 2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LESTONE, CLEAN SAND, FLOWABLE FILL, ETC). 3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS. 4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12 MINIMUM LIFTS. 5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED. 6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE. 7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99. 8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

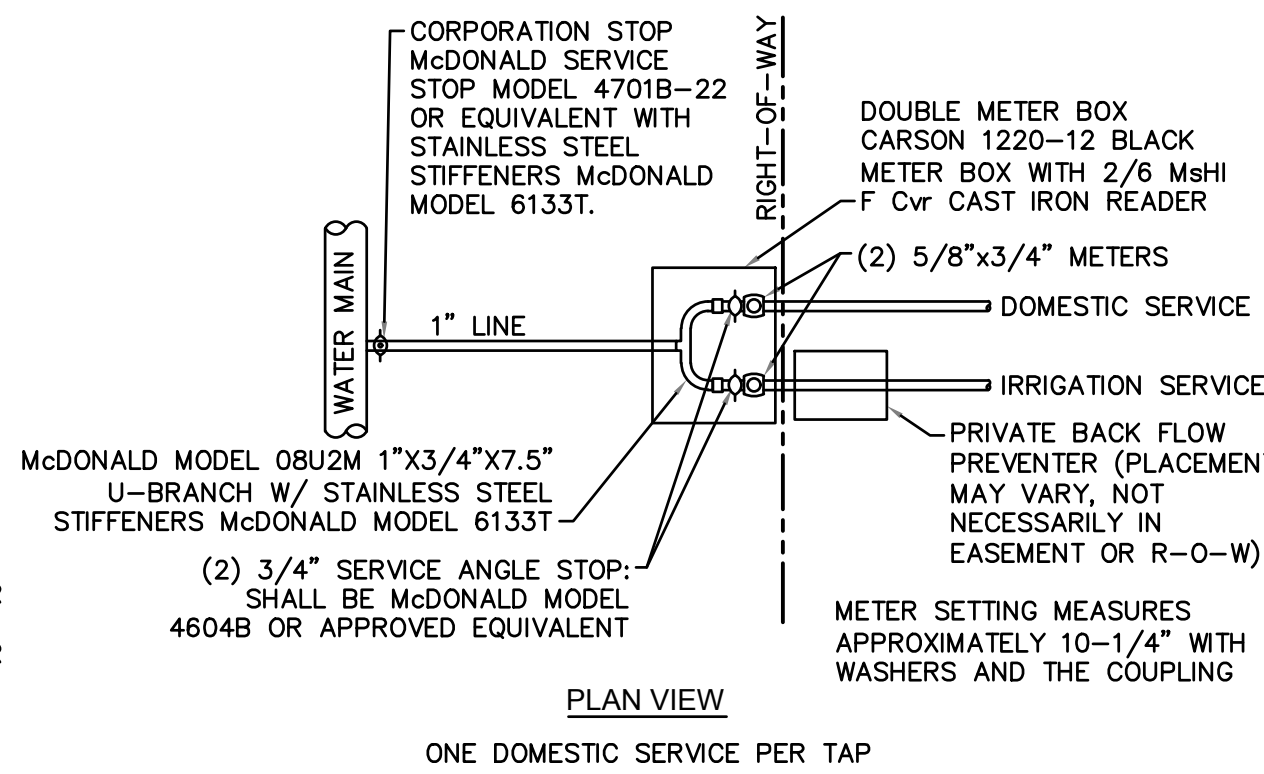
WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE



WD-5 2" BLOW-OFF
NOT TO SCALE



WD-13 TYPICAL TRENCH DETAIL
NOT TO SCALE



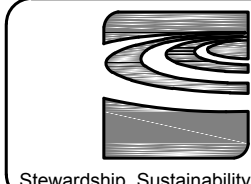
WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

- GENERAL NOTES: 1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY. 2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS. 3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS. 4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS. 5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS



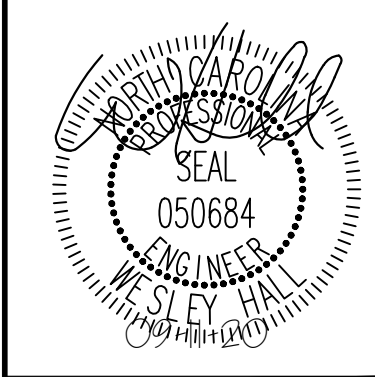
CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE:
1/9/12
SCALE:
N/A
DRAWN BY:
CFPUA
CHECKED BY:
CFPUA
PROJECT NO.:

SHEET NO:
WSD-2

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KHA PROJECT
018005007
DATE
09/14/2020
SCALE AS SHOWN
DESIGNED BY JCL
DRAWN BY JCL
CHECKED BY WWH

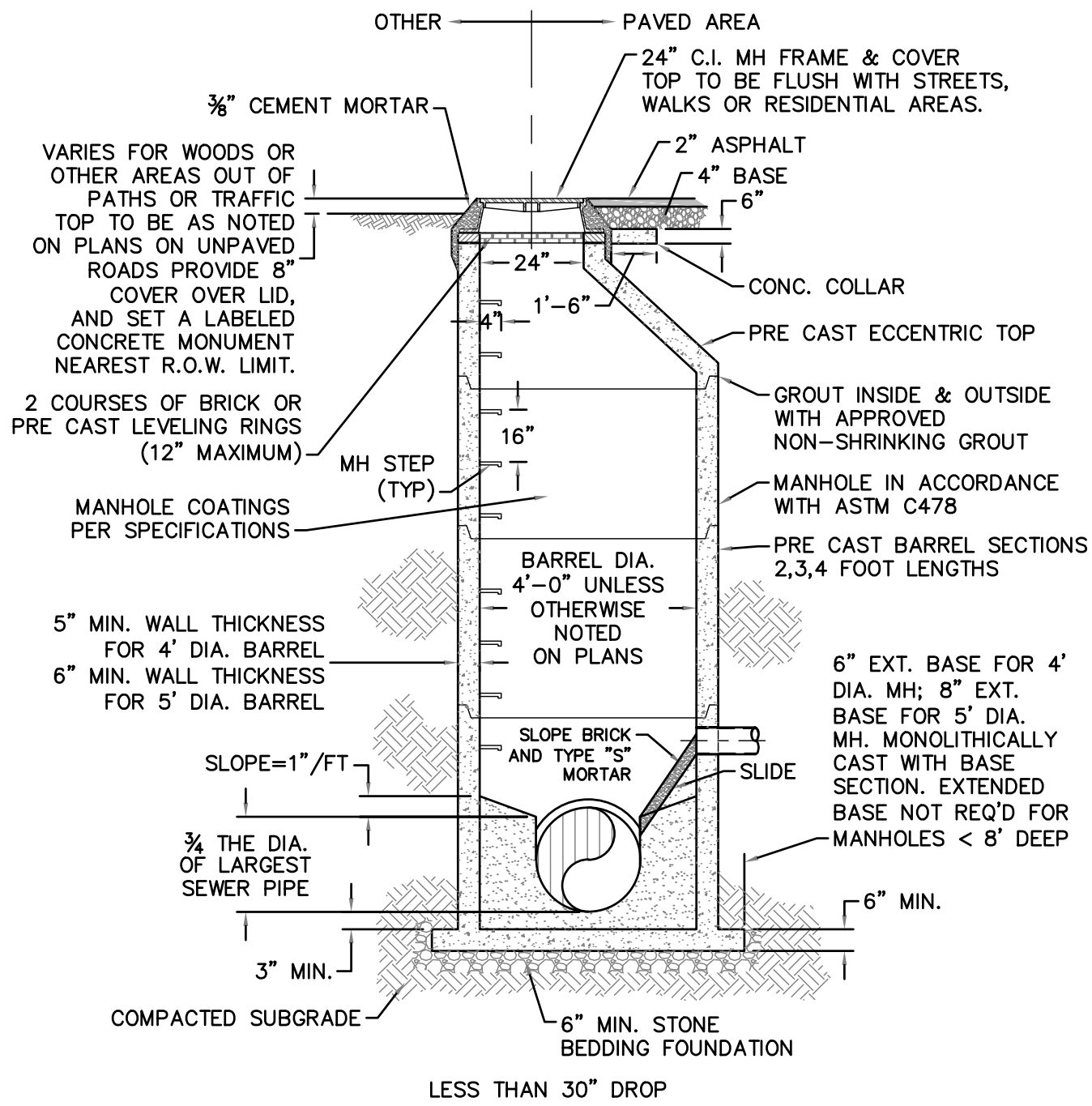
UTILITY DETAILS

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE
NEW HANOVER
COUNTY

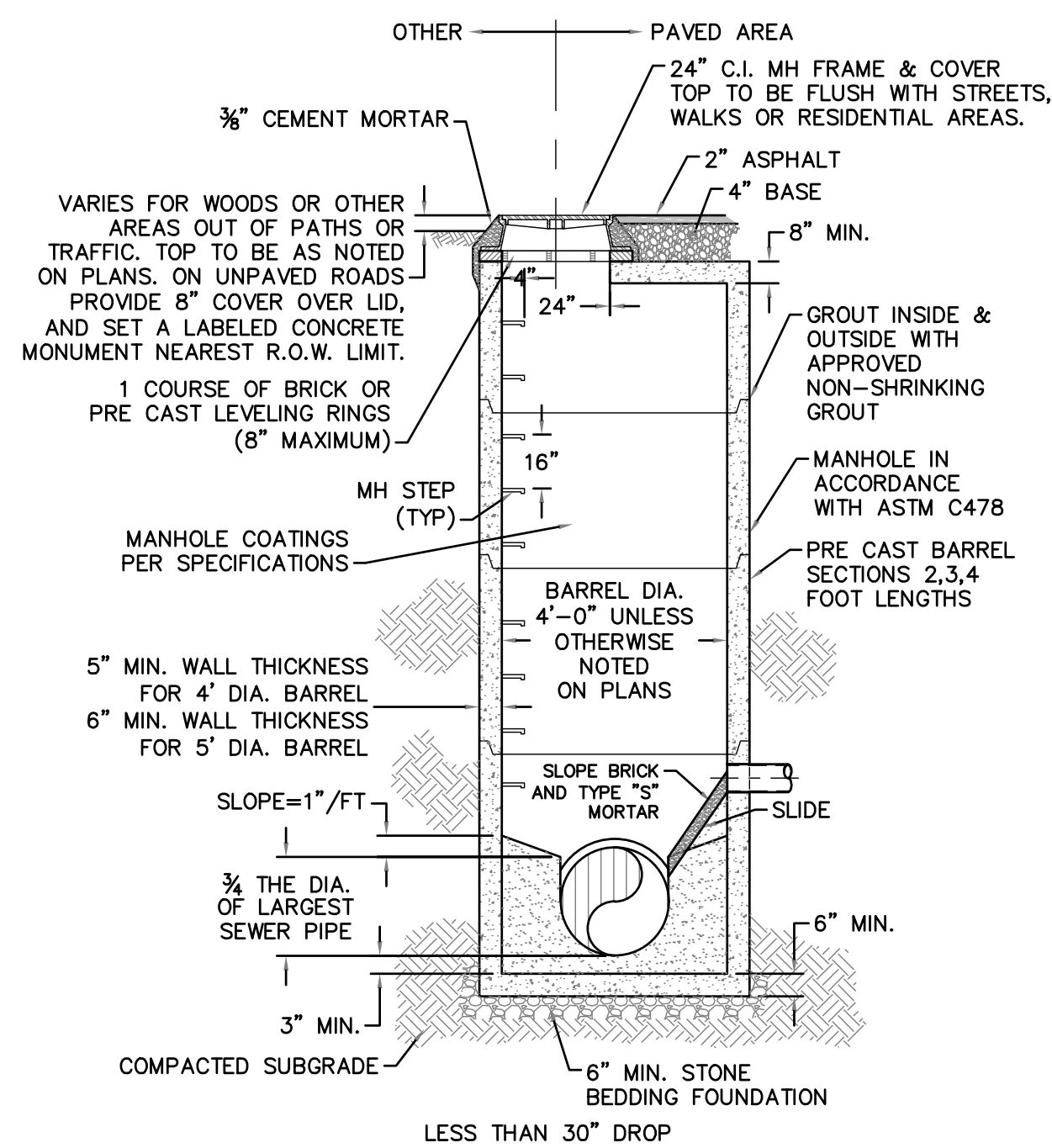
SHEET NUMBER
C8.1

REVISIONS
No.
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BY

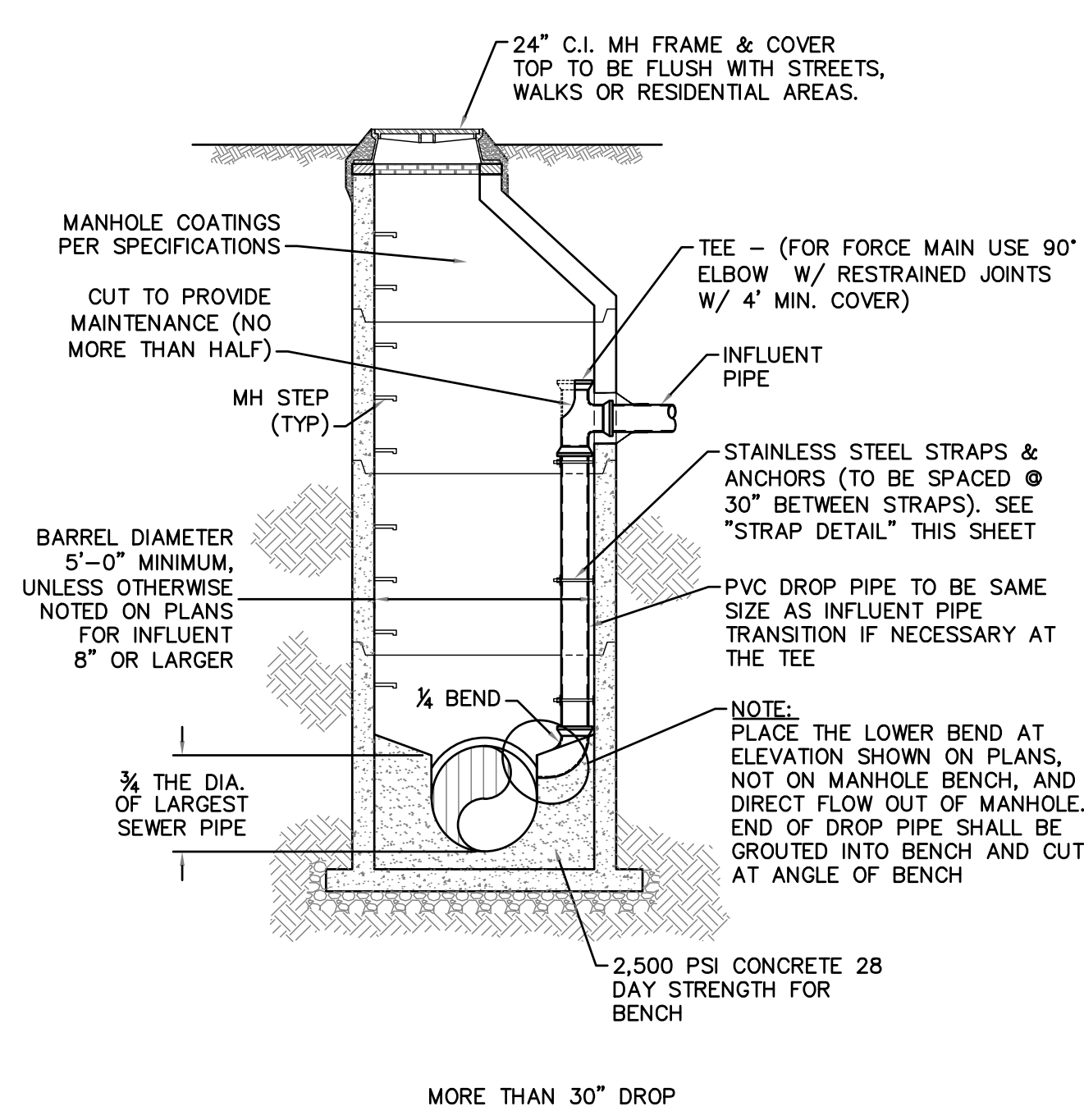
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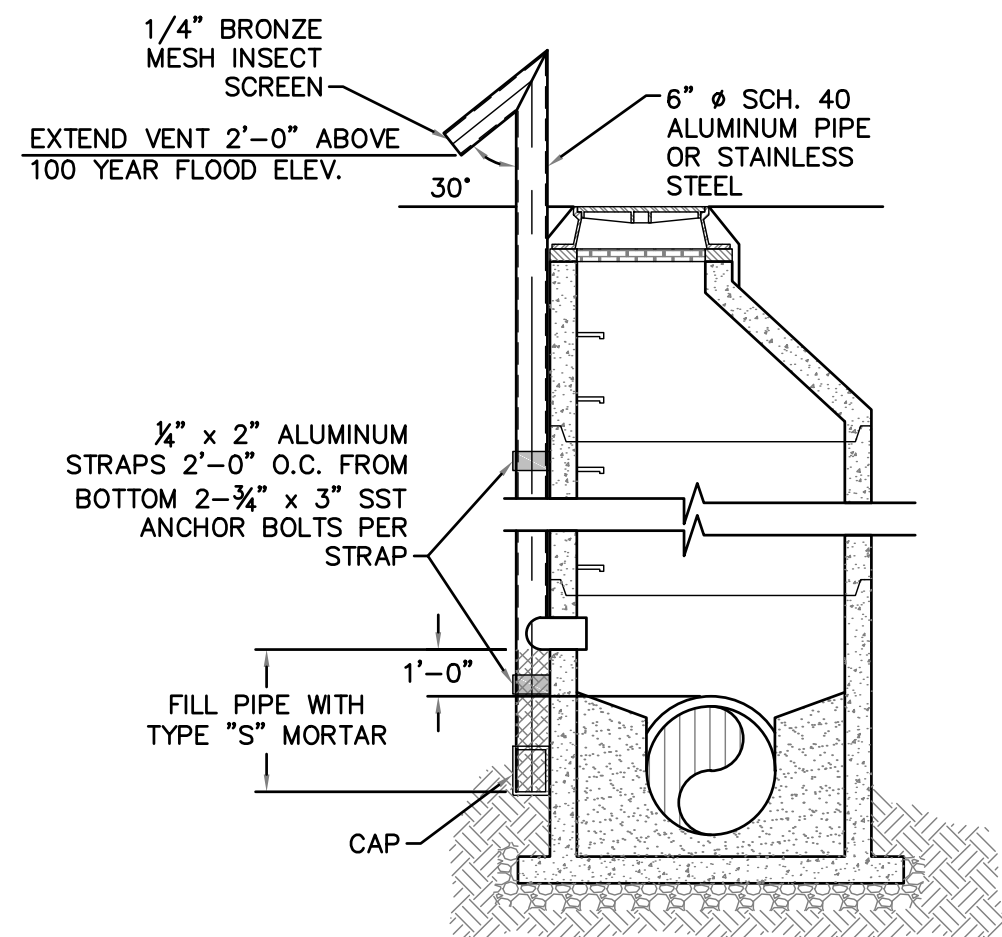
SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL
NOT TO SCALE



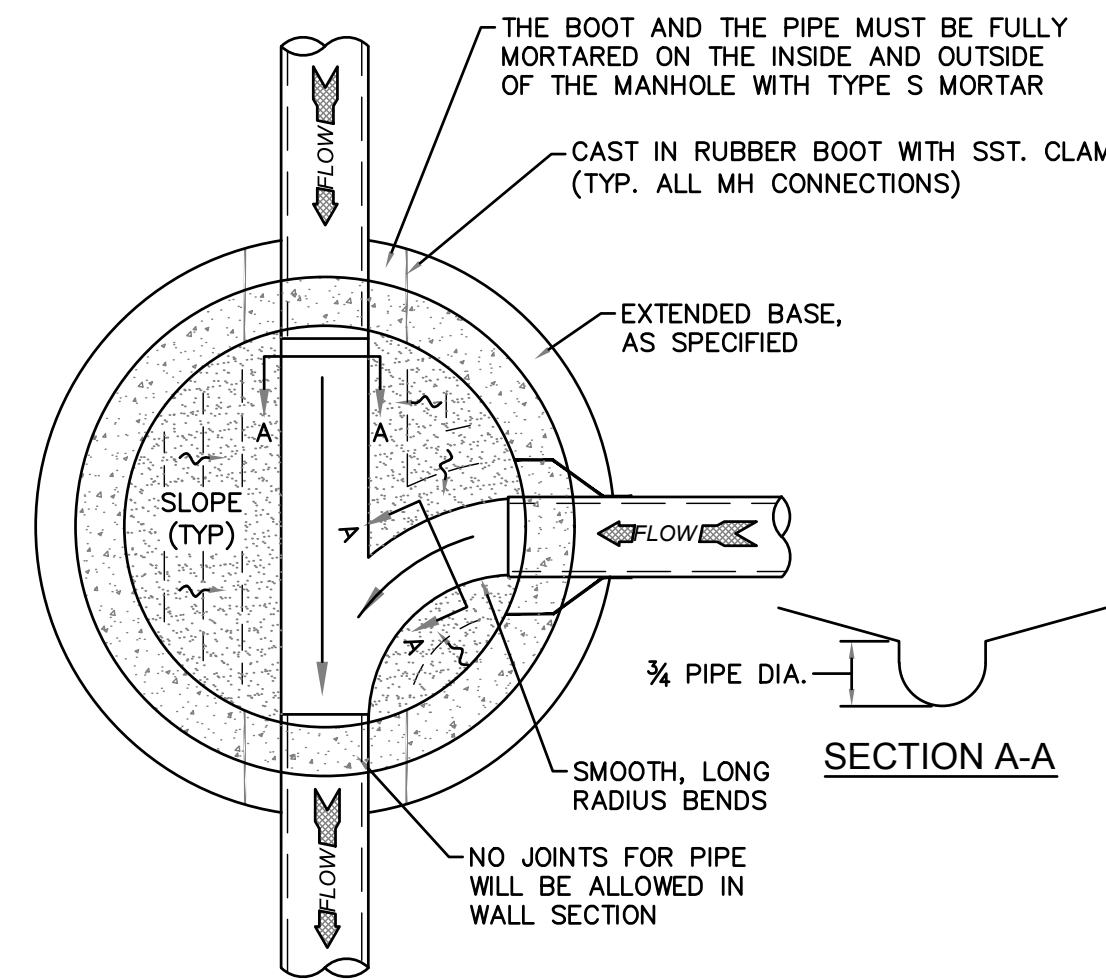
SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
NOT TO SCALE



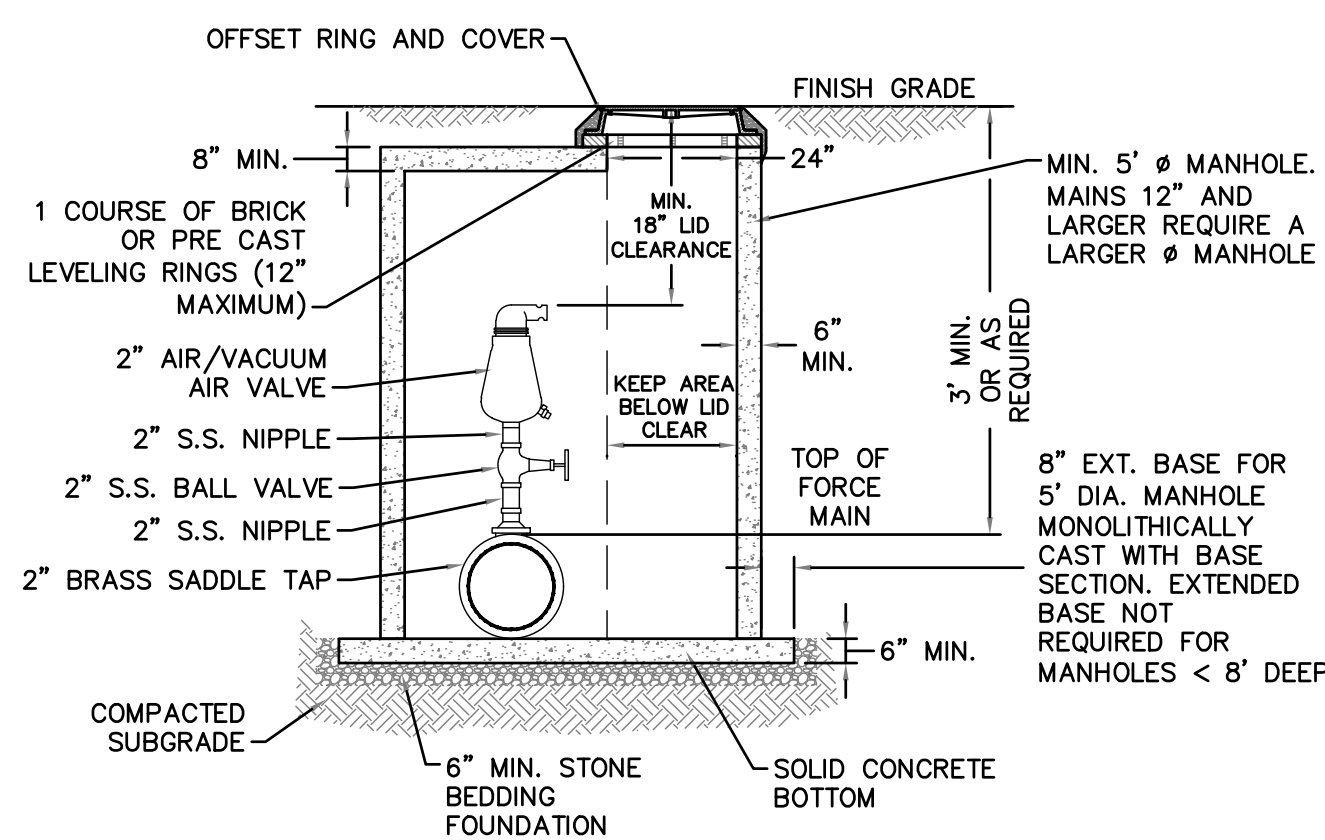
SD-3 DROP MANHOLE
NOT TO SCALE



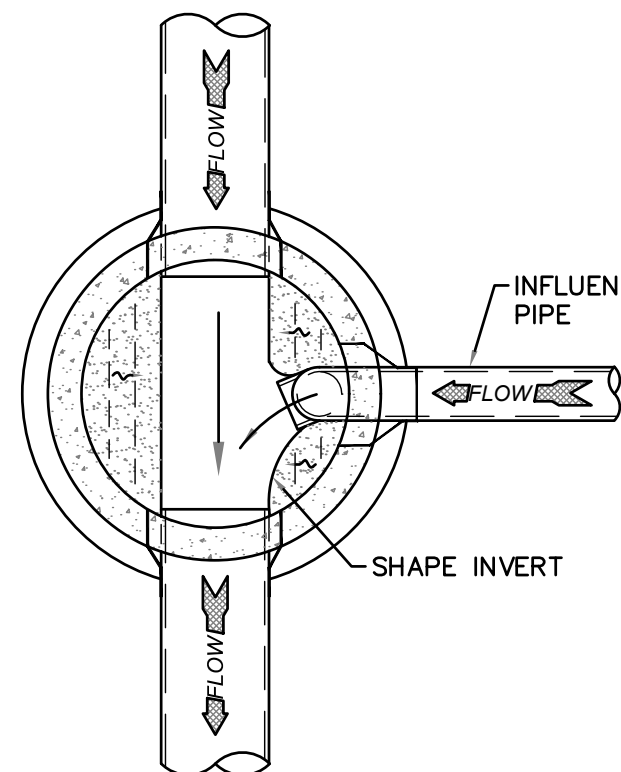
SD-4 STANDARD VENT MANHOLE
NOT TO SCALE



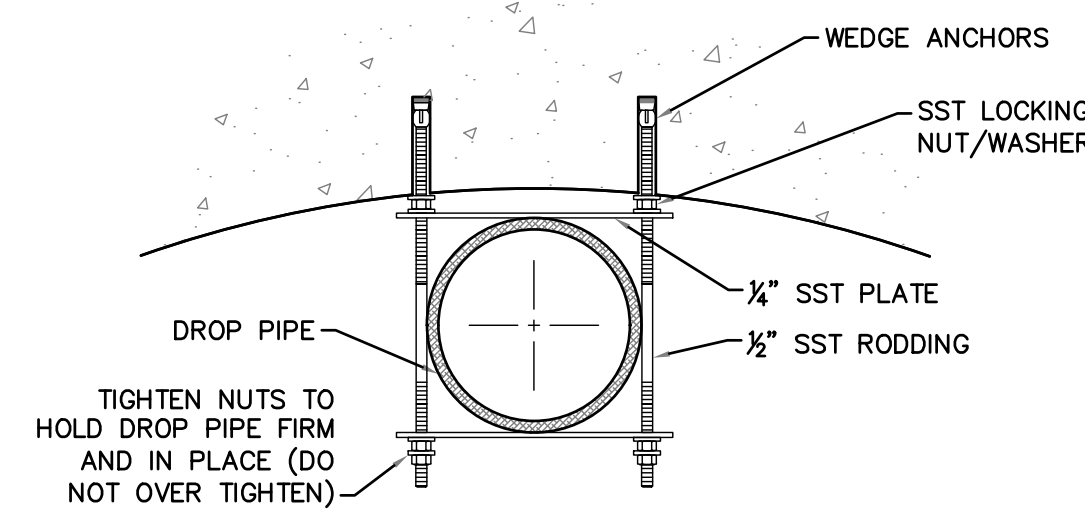
SD-5 MANHOLE FLOOR PLAN
NOT TO SCALE



SD-6 AIR/VACUUM AND AIR RELEASE COMBINATION VALVE
NOT TO SCALE



SD-7 DROP MANHOLE FLOOR PLAN
NOT TO SCALE



SD-8 STRAP DETAIL
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
 - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
 - NO FLEXIBLE COUPLINGS SHALL BE USED.
 - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
 - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

SD-9 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
 - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
 - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
 - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
 - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/26/12
2	STANDARD SEWER NOTE #6 REVISED	12/10/12
3	REVISED STANDARD VENT MANHOLE TO EXTEND VENT 2'-0" ABOVE 100 YR FLOOD	11/20/14
4	Revised Multiple Details	02/15/16

CFPUA SANITARY SEWER

STANDARD DETAILS



CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

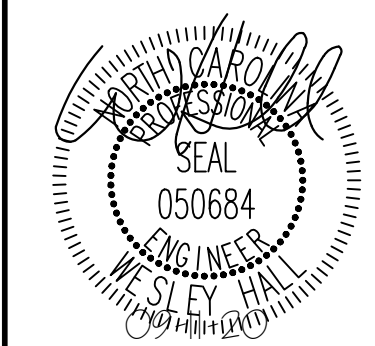
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SCALE:
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CFPUA
CHECKED BY:
CFPUA
PROJECT NO.:

SHEET NO:
SSD-1

VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE
NEW HANOVER COUNTY
NORTH CAROLINA

UTILITY DETAILS

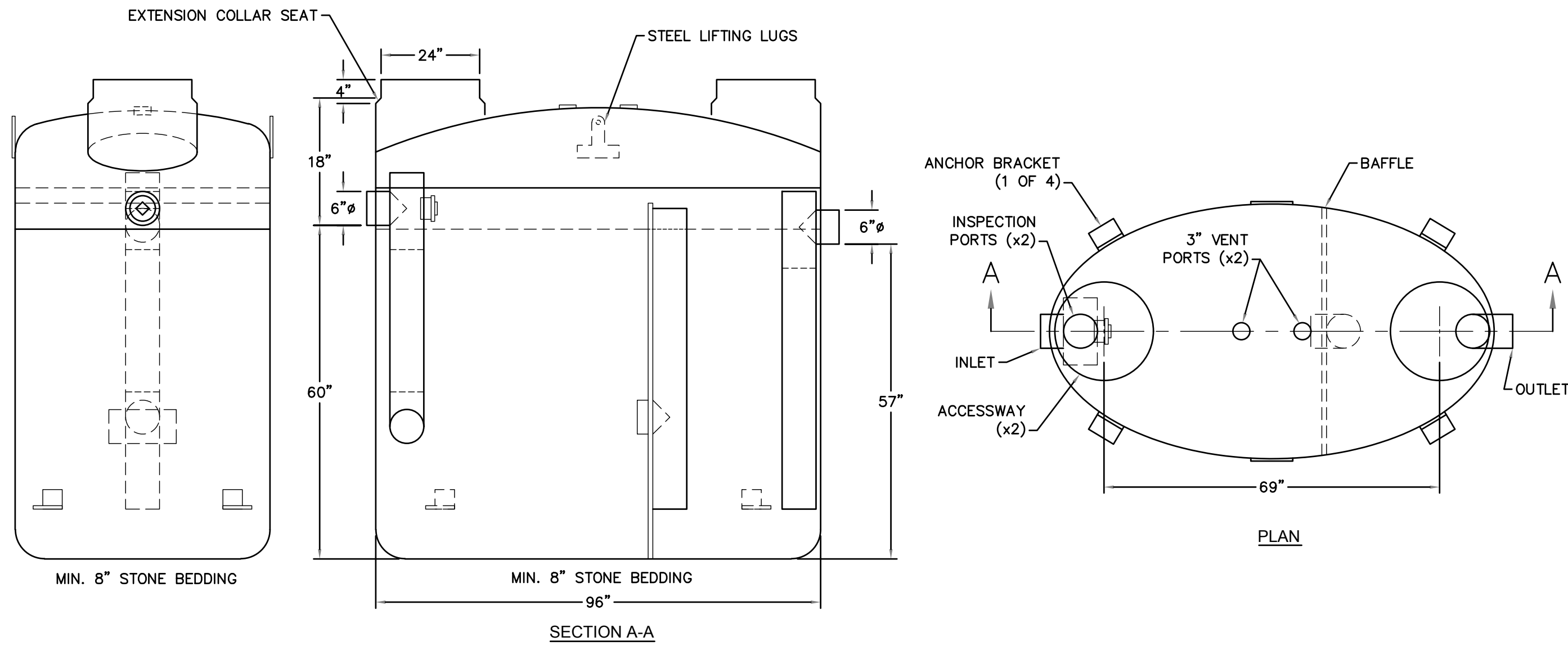
KHA PROJECT
018005007
DATE
09/14/2020
SCALE
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JCL
DRAWN BY
JCL
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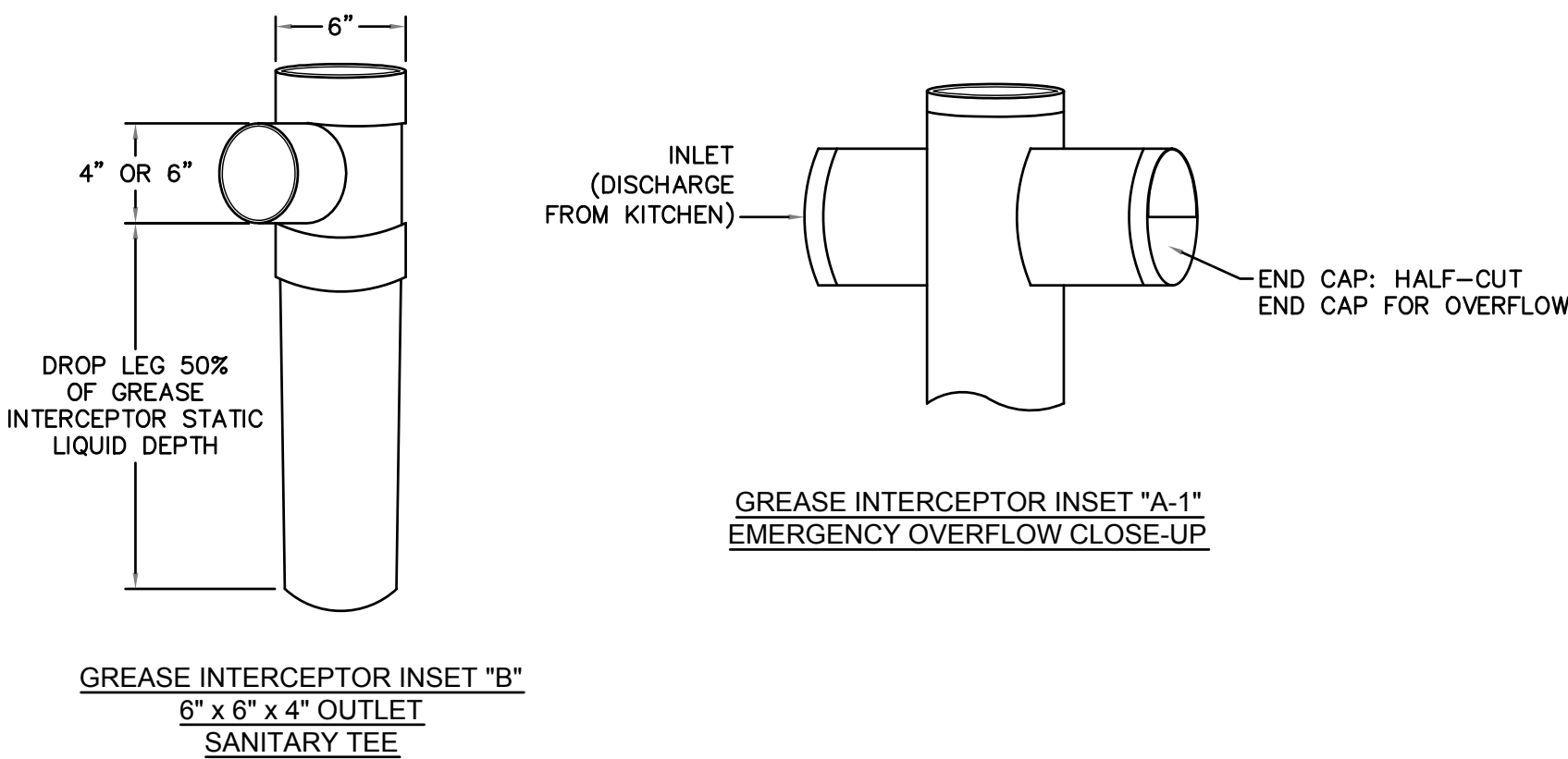
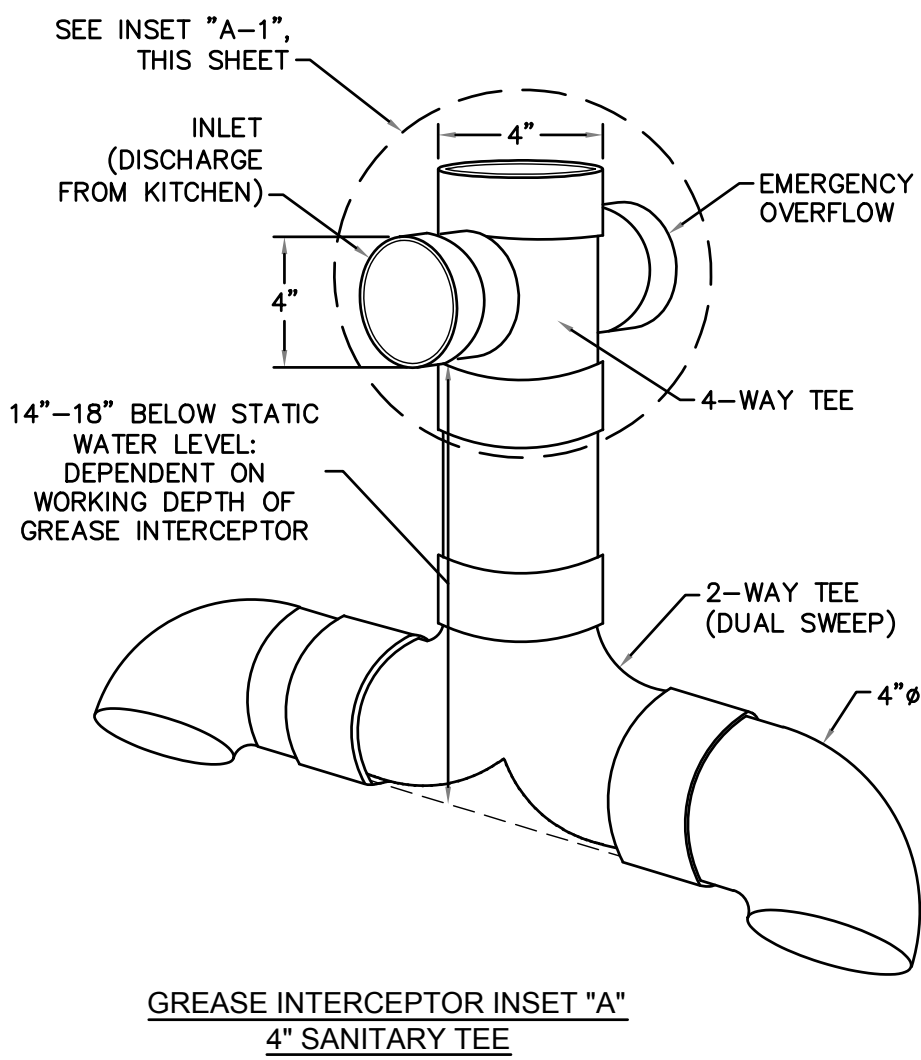
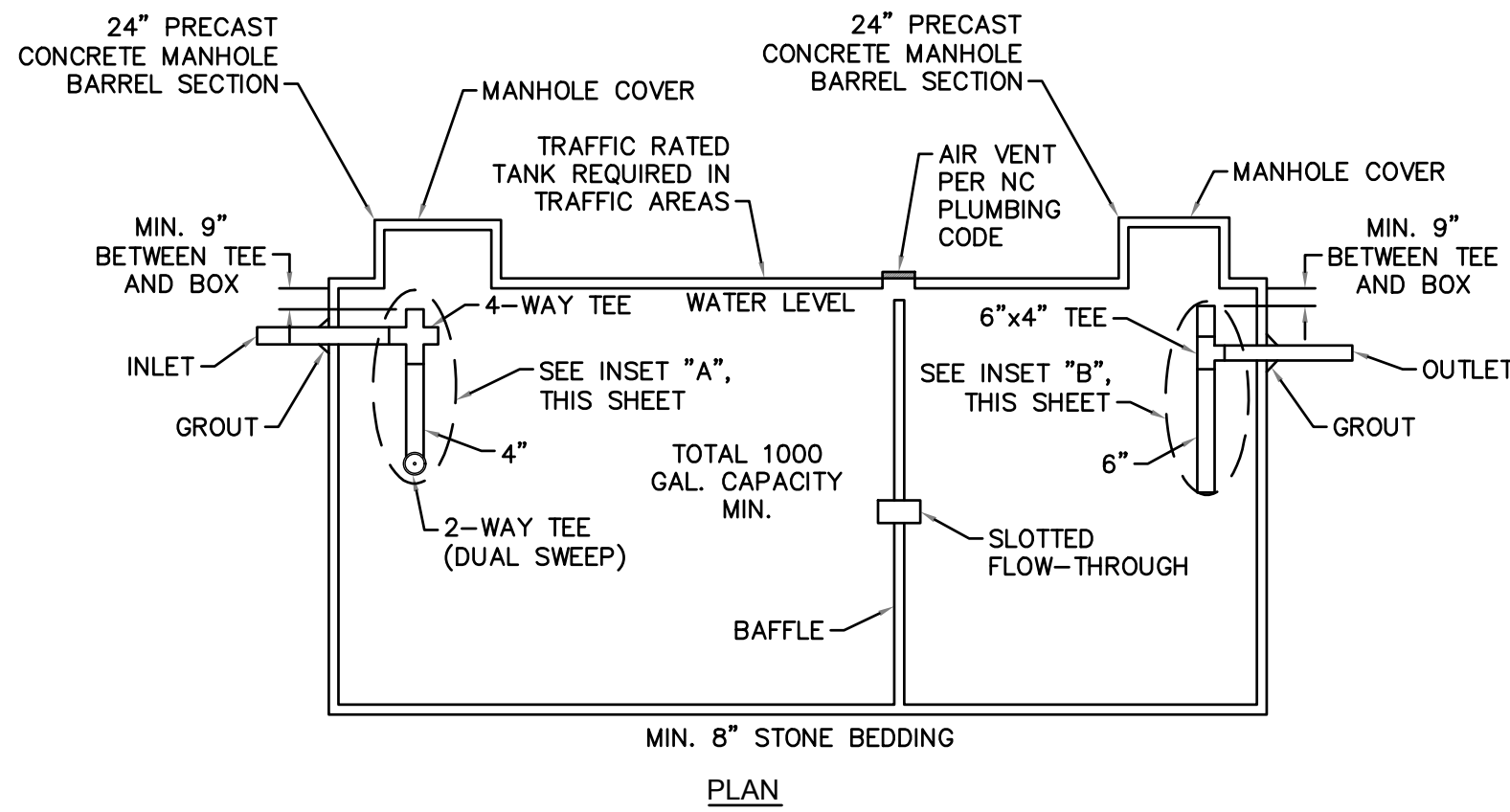
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- NOTES:**
1. FOR GRAVITY APPLICATIONS ONLY.
 2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
 3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC.
 4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL.
 5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING.

SD-22 FIBERGLASS GREASE INTERCEPTOR
NOT TO SCALE



SD-23 CONCRETE GREASE INTERCEPTOR
NOT TO SCALE

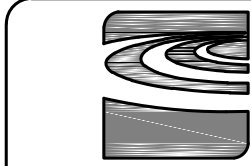
- GENERAL NOTES:**
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**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA
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REV:	DESCRIPTION:	DATE:

CFPUA SANITARY SEWER

STANDARD DETAILS



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235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

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DRAWN BY:
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CFPUA
PROJECT NO.:

SHEET NO:
SSD-4

**VALVOLINE
CAROLINA BEACH**
PREPARED FOR
VALVOLINE
NEW HANOVER COUNTY
NORTH CAROLINA

SHEET NUMBER
C8.5

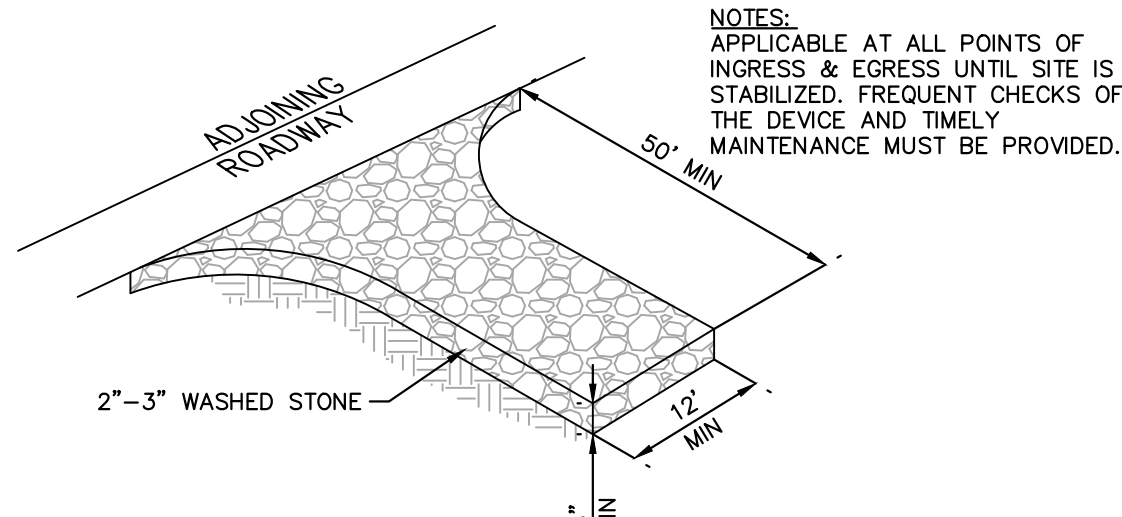
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Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH Layout: C9.0 EROSION CONTROL DETAILS September 11, 2020 04:44:48pm K:\VAL-LOEA\018852007_valvoline_carolina_beach_planning_phase\p15_cad_files\plan sheets\C9.0 EROSION CONTROL DETAILS.dwg This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and degradation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



CONSTRUCTION SPECIFICATIONS:

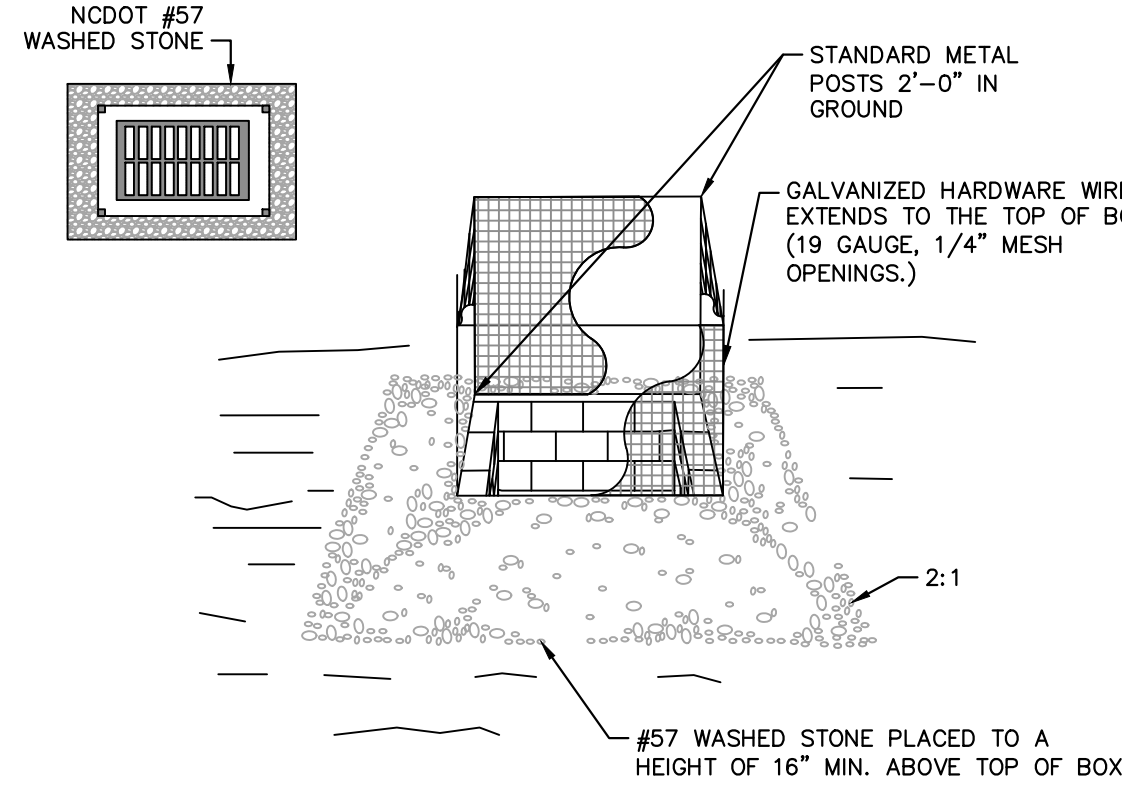
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE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

MAINTENANCE NOTES:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.

KHA DETAIL NO: 01.101.R02

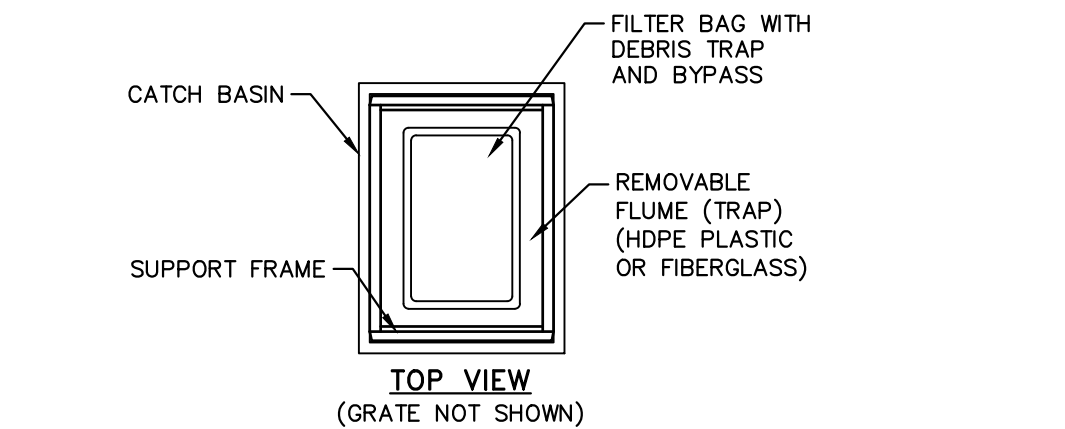


MAINTENANCE

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

CATCH BASIN AND YARD INLET PROTECTION
N.T.S.

KHA DETAIL NO: 01.202.R01

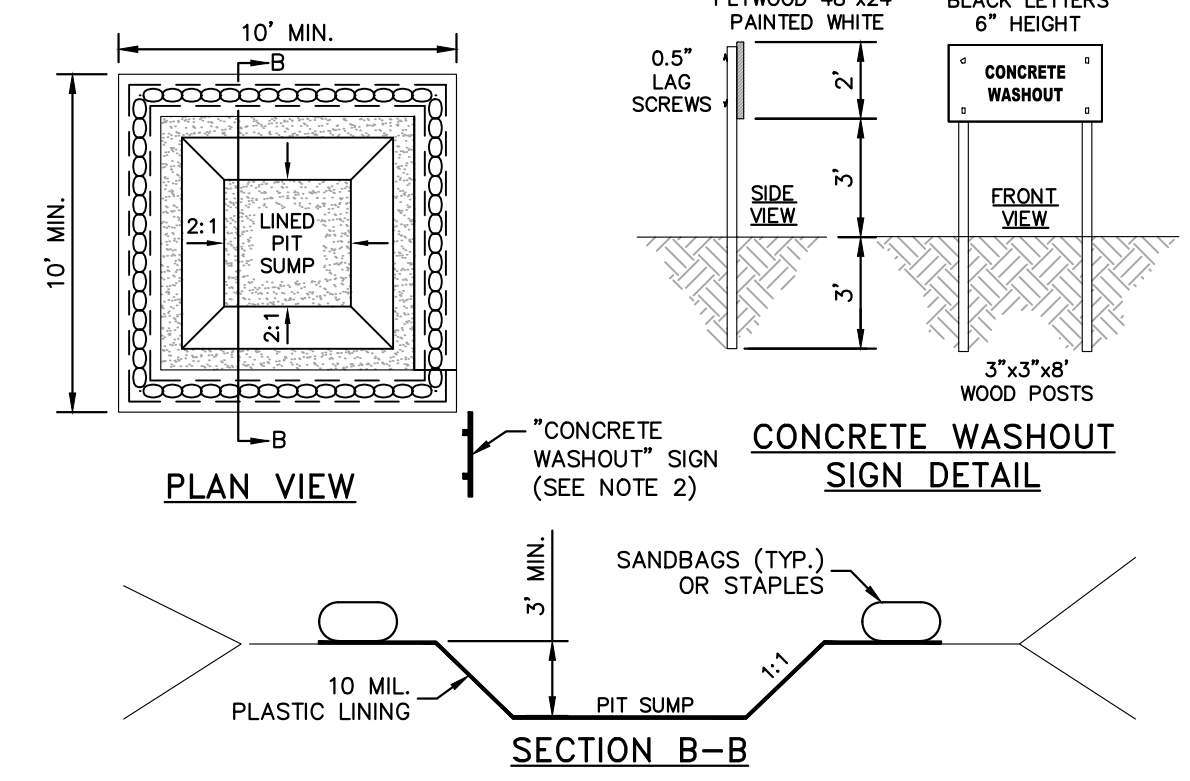


CAPACITY CHART				
MODEL NO.	INLET SIZE	LINER DEPTH	STORAGE CAPACITY*	CLEAN FLOW RATE**
FF-2424HC	24" X 24"	12"	1.67 CU. FT.	470 GPM
"	24" X 24"	24"	4.18 CU. FT.	914 GPM
"	24" X 24"	36"	6.69 CU. FT.	1,357 GPM
FF-2436HC	24" X 36"	12"	2.55 CU. FT.	641 GPM
"	24" X 36"	24"	6.38 CU. FT.	1,201 GPM
"	24" X 36"	36"	10.20 CU. FT.	1,761 GPM
FF-3636HC-GO	36" X 36"	12"	3.36 CU. FT.	772 GPM
"	36" X 36"	24"	8.39 CU. FT.	1,402 GPM
"	36" X 36"	36"	13.43 CU. FT.	2,032 GPM

* STORAGE CAPACITY REFLECTS MAXIMUM SOLIDS COLLECTION PRIOR TO IMPEDING BYPASS.
** FLOW RATES ARE "CALCULATED CLEAN FLOW RATES" BASED ON LINER MATERIAL FLOW RATE OF 70 GPM/SQ. FT. (RECOMMEND APPLYING FACTOR OF .25 TO .50 TO FLOW RATES TO ALLOW FOR SEDIMENT AND DEBRIS)

CATCH BASIN SILT PROTECTION INSERT
N.T.S.

KHA DETAIL NO: 01.203.R01



NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
5. PIT CAPACITY IS MINIMUM OF 6 CUBIC FEET PER 10 CUBIC YARDS OF CONCRETE.

CONCRETE WASHOUT STATION
N.T.S.

KHA DETAIL NO: 01.102.R01



DATE	TYPE	PLANTING RATE	REGION
JAN. 1 – MAY 1	RYE (GRAIN)	120 LBS/ACRE	PIEDMONT
JAN. 1 – MAY 1	ANNUAL LESPEDEZA (KOBE)	50 LBS/ACRE	PIEDMONT
MAY 1 – AUG. 15	GERMAN MILLET	40 LBS/ACRE	PIEDMONT
MAY 1 – AUG. 15	SMALL-STEMMED SUDANGRASS	50 LBS/ACRE	PIEDMONT
AUG. 15 – DEC. 30	RYE (GRAIN)	120 LBS/ACRE	PIEDMONT
DEC. 1 – APR. 15	RYE (GRAIN)	120 LBS/ACRE	COASTAL PLAIN
DEC. 1 – APR. 15	ANNUAL LESPEDEZA (KOBE)	50 LBS/ACRE	COASTAL PLAIN
APR. 15 – AUG. 15	GERMAN MILLET	40 LBS/ACRE	COASTAL PLAIN
AUG. 15 – DEC. 30	RYE (GRAIN)	120 LBS/ACRE	COASTAL PLAIN
FEB. 15 – MAY 15	RYE (GRAIN)	120 LBS/ACRE	MOUNTAINS – ABOVE 2500 FEET
FEB. 1 – MAY 1	RYE (GRAIN)	120 LBS/ACRE	MOUNTAINS – BELOW 2500 FEET
FEB. 15 – MAY 15	ANNUAL LESPEDEZA (KOREAN)	50 LBS/ACRE	MOUNTAINS – ABOVE 2500 FEET
FEB. 1 – MAY 1	ANNUAL LESPEDEZA (KOREAN)	50 LBS/ACRE	MOUNTAINS – BELOW 2500 FEET
MAY 15 – AUG. 15	GERMAN MILLET	40 LBS/ACRE	MOUNTAINS
MAY 15 – AUG. 15	SMALL-STEMMED SUDANGRASS	50 LBS/ACRE	MOUNTAINS
AUG. 15 – DEC. 15	RYE (GRAIN)	120 LBS/ACRE	MOUNTAINS

TEMPORARY SEEDING SCHEDULE AND SEEDBED PREPARATION
N.T.S.

SEEDBED PREPARATION:

1. TILL OR DISK THE PREPARED AREAS TO BE SEEDDED TO A MINIMUM DEPTH OF FOUR INCHES.
2. REMOVE STONES LARGER THAN THREE INCHES ON ANY SIDE, STOCKS, ROOTS AND OTHER EXTRANEIOUS MATERIALS THAT SURFACE.
3. IF NOT INCORPORATED DURING THE SOIL PREPARATION PROCESS, ADD pH MODIFIER AND FERTILIZERS AT THE RATE SPECIFIED IN THE SOIL TEST REPORT. IF THERE IS NO SOIL TEST REPORT, FOLLOW SOIL AMENDMENTS BELOW.
4. RE-COMPACT THE AREA UTILIZING A CULTIPACKER ROLLER. THE FINISHED GRADE SHALL BE A SMOOTH EVEN SOIL SURFACE WITH A LOOSE, UNIFORMLY FINE TEXTURE.
5. EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN 1/2 INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD INCLUDE A WOOD FIBER (CELLULOSE) MULCH.

NOTES:

1. CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUEDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.
2. THIS SEEDING SCHEDULE IS FOR EROSION AND SEDIMENT CONTROL ONLY. SEE LANDSCAPE PLAN FOR FINAL SEEDING.
3. THE CONTRACTOR SHALL PROVIDE GROUND COVER ON DESIGNATED AREAS AND SLOPES GREATER THAN 3:1 WITHIN 7 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
4. CONTRACTOR SHALL PROVIDE GROUND COVER IN 14 DAYS ON ALL OTHER AREAS FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
5. PERMANENT GROUND COVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION.

6. COMPLETE GRADING BEFORE PREPARING SEEDBEDS, AND INSTALL ALL NECESSARY EROSION CONTROL PRACTICES SUCH AS, DIKES, WATERWAYS, AND BASINS.
7. IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES USING A RIPPER, HARROW, OR CHISEL FLOW.
8. THE USE OF AN APPROPRIATE MULCH WILL HELP ENSURE ESTABLISHMENT UNDER NORMAL CONDITIONS, AND IS ESSENTIAL TO SEEDING SUCCESS UNDER HARSH SITE CONDITIONS.

SOIL AMENDMENTS:

LATE WINTER THROUGH SUMMER: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.
FALL: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1000 LB/ACRE 10-10-10 FERTILIZER.

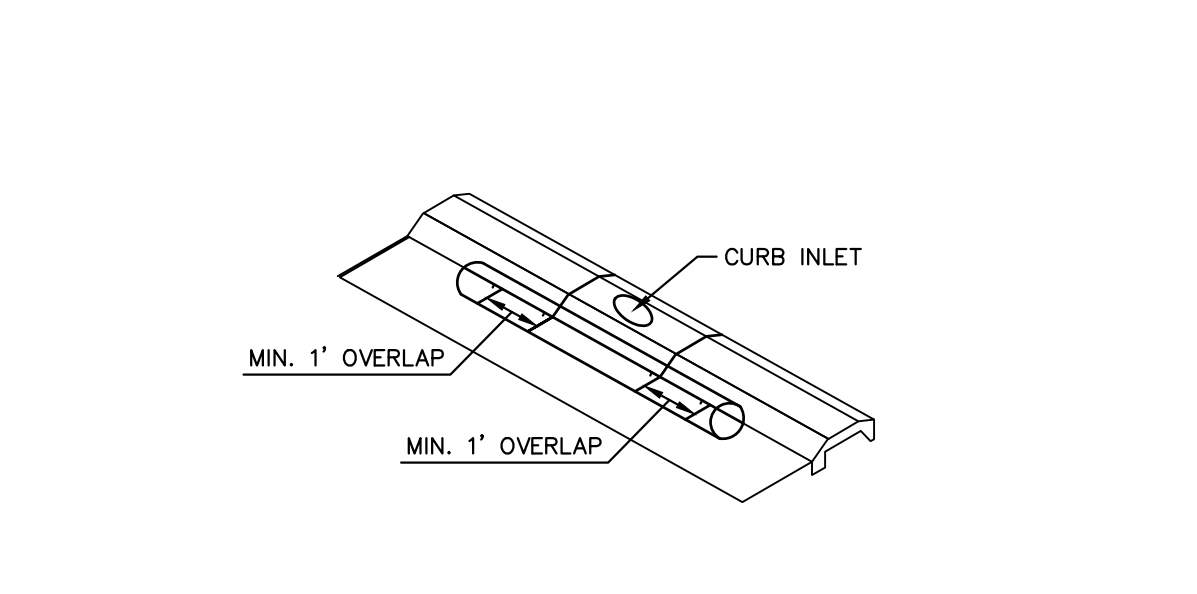
MULCH:

APPLY 4000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:

LATE WINTER THROUGH SUMMER: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.
FALL: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

KHA DETAIL NO: 01.104.R01



GUTTERBUDDY® SPECIFICATIONS
FOR CURB GUTTER STORM DRAINS

1.0 DESCRIPTION

1.1 THIS WORK SHALL CONSIST OF FURNISHING, PLACING, MAINTAINING AND REMOVING THE GUTTERBUDDY® SEDIMENT CONTROL DEVICE AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THE CONTRACT DRAWINGS. THE GUTTERBUDDY® SEDIMENT CONTROL SYSTEM IS DISTRIBUTED BY THE BMP STORE.

2.0 MATERIALS

2.1 GUTTERBUDDY®
THE GUTTERBUDDY® SHALL BE SYNTHETIC FILTER MANUFACTURED FROM RECYCLED SYNTHETIC FIBERS.

2.1.1 THE GUTTERBUDDY® WILL BE MANUFACTURED TO BE 9" IN DIAMETER AND ARE AVAILABLE IN 4', 6', 8', 10', 12', 14' AND 16' LENGTHS AND A MINIMUM OF TWENTY-FOUR (24) INCHES LONGER THAN THE CURB INLET OPENING. THIS WILL ALLOW FOR SUFFICIENT LENGTH TO COVER THE INLET WITH TWELVE (12) INCHES BEYOND THE INLET ON BOTH ENDS.

3.0 CONSTRUCTION SEQUENCE

3.1 GENERAL

- 3.1.1 INSTALL THE GUTTERBUDDY® IN FRONT OF THE CURB INLET OPENING. EACH END OF THE GUTTERBUDDY® SHOULD OVERLAP THE CURB INLET APPROXIMATELY 12".
- 3.1.2 THE GUTTERBUDDY® SHOULD BE CLEANED IF A VISUAL INSPECTION SHOWS SILT AND DEBRIS BUILD UP AROUND THE GUTTERBUDDY®.
- 3.1.3 TO REMOVE THE GUTTERBUDDY®, LIFT OUT OF THE OPENING.
- 3.1.4 THE GUTTERBUDDY® IS REUSABLE. ONCE THE CONSTRUCTION PROJECT IS COMPLETE AND IT IS NO LONGER NEEDED FOR SEDIMENT CONTROL, REMOVE, CLEAN AND STORE OUT OF THE SUNLIGHT UNTIL NEEDED ON THE NEXT PROJECT.
- 3.1.5 PONDING IS LIKELY IF SEDIMENT IS NOT REMOVED REGULARLY. INSPECTION OF GUTTERBUDDY® SHOULD BE ON A REGULAR BASIS AND IMMEDIATELY AFTER MAJOR RAIN EVENTS.

4.0 BASIS OF PAYMENT

4.1 THE PAYMENT FOR ANY GUTTERBUDDY® USED DURING THE CONSTRUCTION IS TO BE INCLUDED IN THE BID OF THE OVERALL EROSION AND SEDIMENT CONTROL PLAN AND PRICED BY THE LINEAR FOOT.

NOTE

INSTALL ROCK AND GRAVEL AROUND GUTTER BUDDY TO PRECLUDE SEDIMENT LADEN RUNOFF FROM FLOWING UNDERNEATH INLET PROTECTION.

CURB INLET SILT PROTECTION
N.T.S.

KHA DETAIL NO: 01.204.R01



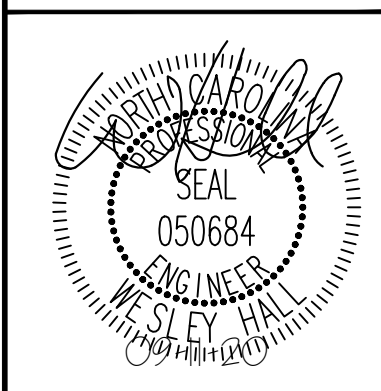
SURVEY NOTE:
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HORIZONTAL DATUM: NAD83 (2001)
VERTICAL DATUM: NAVD 1988

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCDEQ, NEW HAMOVER COUNTY AND NCDDOT STANDARDS AND SPECIFICATIONS; MORE STRINGENT SHALL GOVERN.

LIMITS OF DISTURBANCE: 0.70 AC

NO.	REVISIONS	DATE	BY

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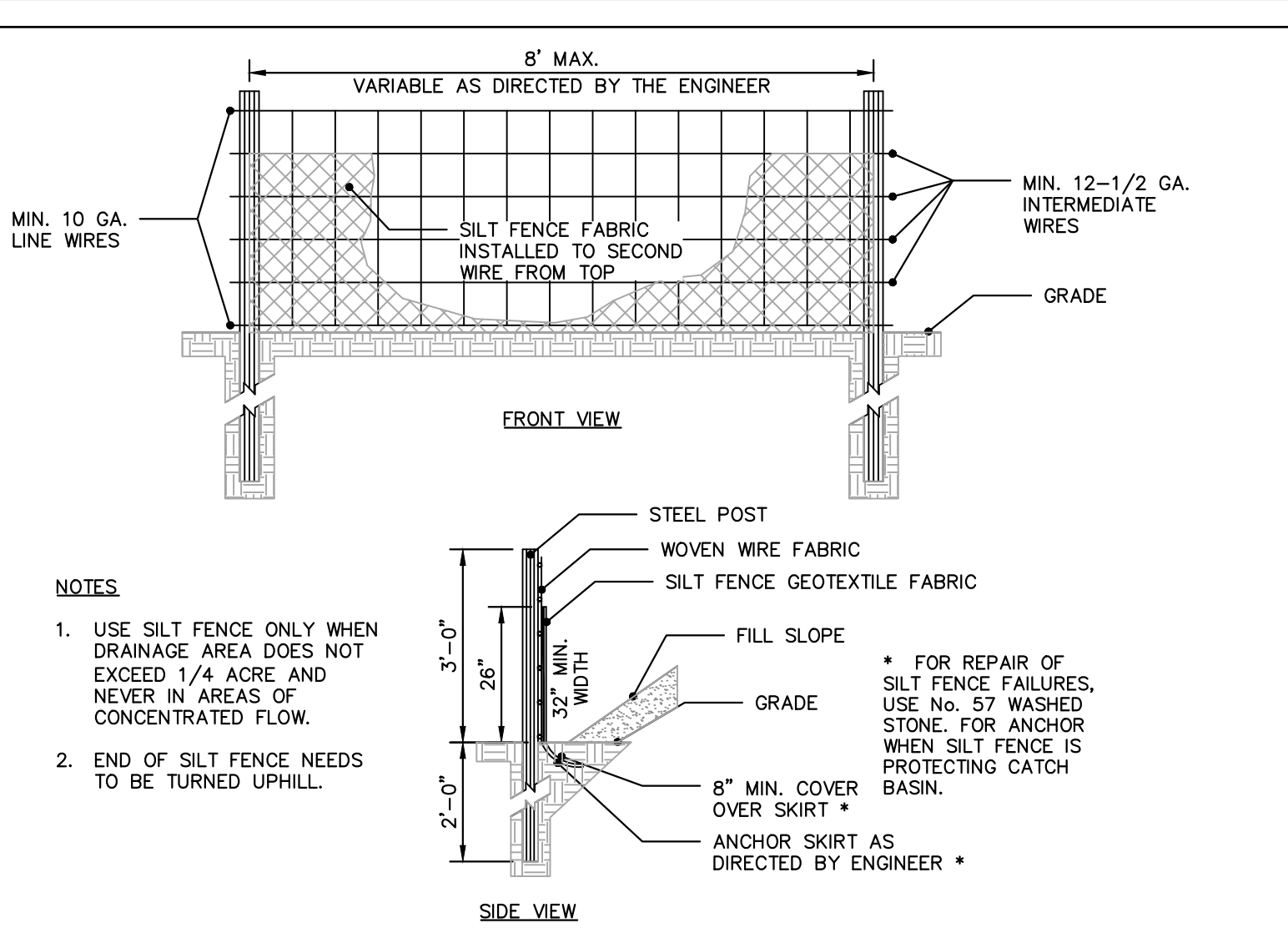


KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
018005007	09/14/2020	AS SHOWN	JCL	JCL	WHL

VALVOLINE CAROLINA BEACH
EROSION CONTROL DETAILS
PREPARED FOR
VALVOLINE
NORTH CAROLINA
SHEET NUMBER
C9.0



Plotted By: Hall, Wes Sheet Set: VALVOLINE CAROLINA BEACH Layout: C9.1 EROSION CONTROL DETAILS September 11, 2020 04:44:50pm K:\VAL-LDEV\018652007_valvoline carolina beach planning phase\p18_cod files\plansheets\C9.0 EROSION CONTROL DETAILS.dwg This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



TEMPORARY SILT FENCE
N.T.S.

CONSTRUCTION SPECIFICATIONS

MATERIALS

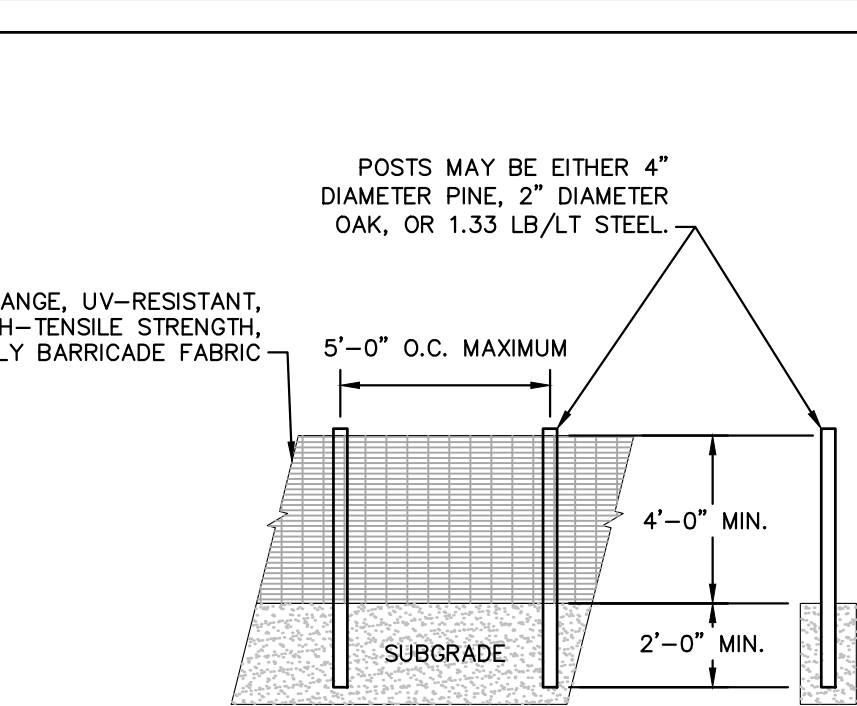
1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 F.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB./LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION

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 SURFACE. (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 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 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 MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE 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.

MAINTENANCE

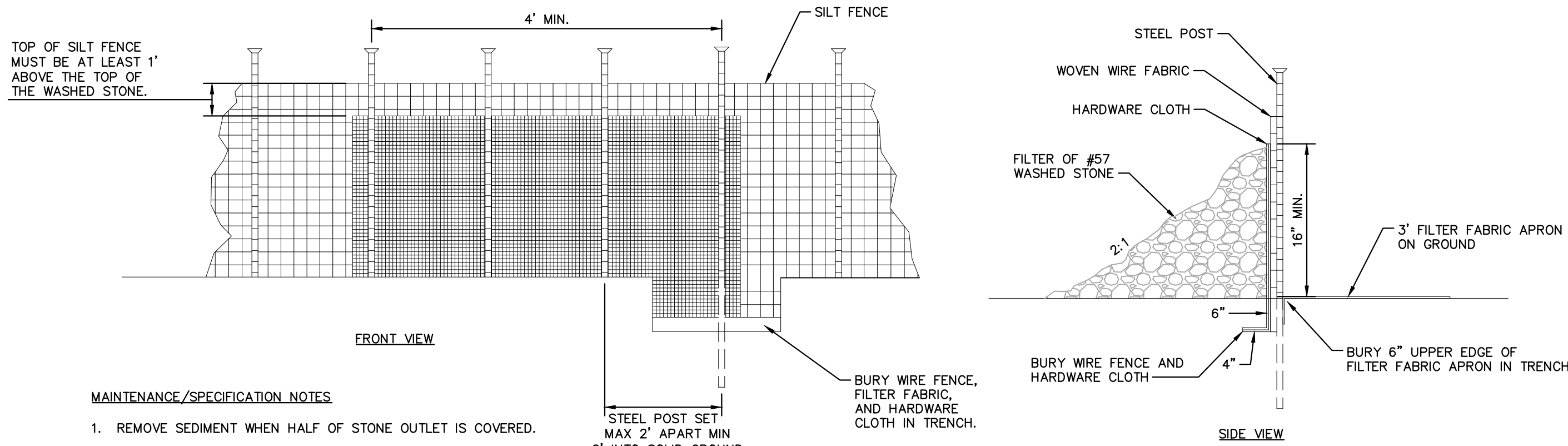
INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



MAINTENANCE SPECIFICATIONS

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

ORANGE SAFETY FENCE
N.T.S.



SILT FENCE OUTLET
N.T.S.

811
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SURVEY NOTE:
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HORIZONTAL DATUM: NAD83 (2011)
VERTICAL DATUM: NAVD 1988

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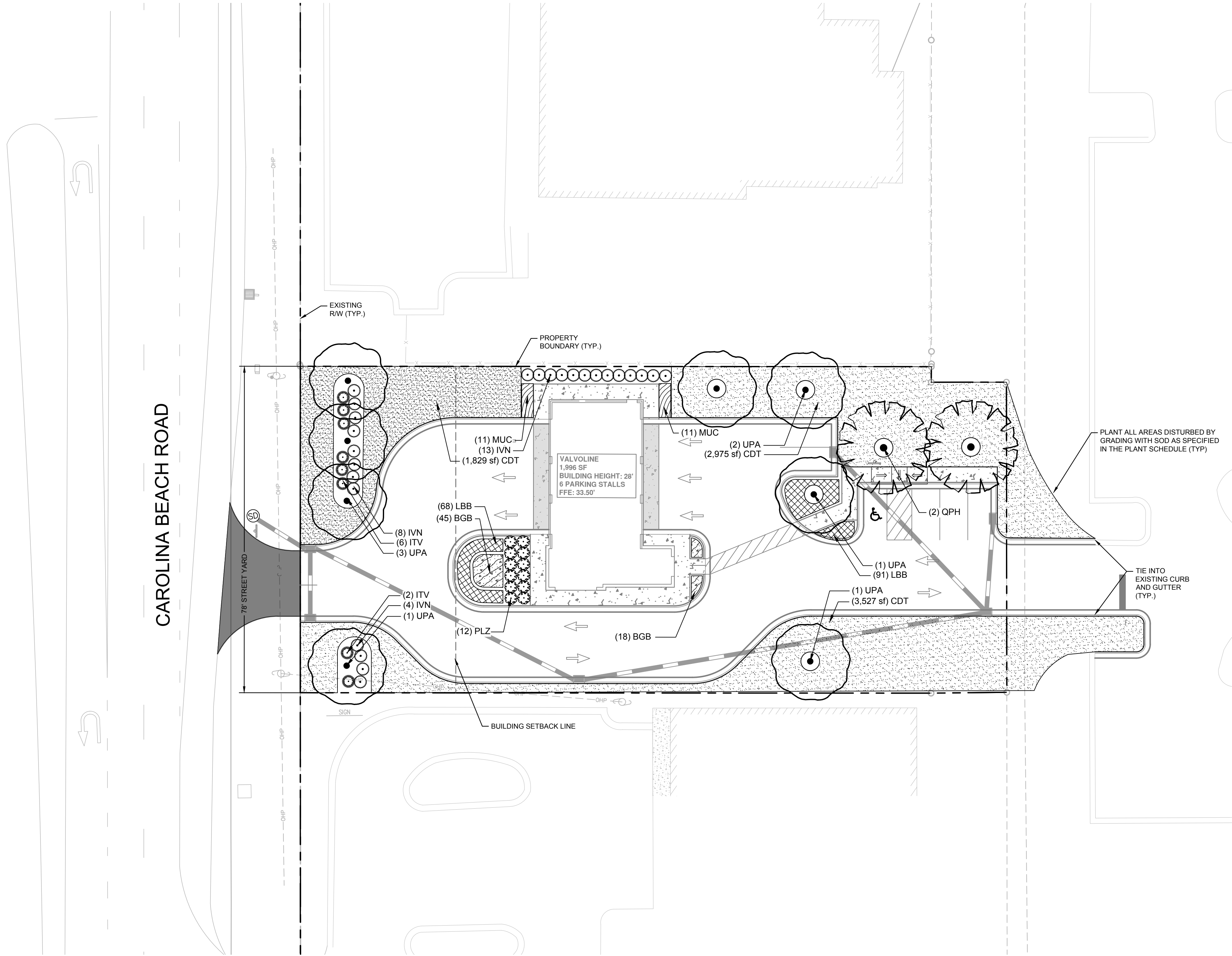
LIMITS OF DISTURBANCE: 0.70 AC

KHA PROJECT 018005007				DATE 09/14/2020	SCALE AS SHOWN	DESIGNED BY JCL	DRAWN BY JCL	CHECKED BY JWH
VALVOLINE CAROLINA BEACH PREPARED FOR VALVOLINE				EROSION CONTROL DETAILS				
NEW HANOVER COUNTY				NORTH CAROLINA				
SHEET NUMBER C9.1				NO. _____				DATE _____
BY _____				REVISIONS				

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SEAL
050684
JAMES HILL
REGISTERED PROFESSIONAL ENGINEER
EXPIRATION DATE 12/31/2024

Plotted By: OBrien, Vol. Sheet: Set: VALVOLINE CAROLINA BEACH LANDSCAPE PLAN - September 11, 2020 06:22:27pm K:\NRAL\DEV\01865007_valvoline carolina beach planning phase\p15_cad_files\plan sheets\L1.0 LANDSCAPE PLAN.dwg
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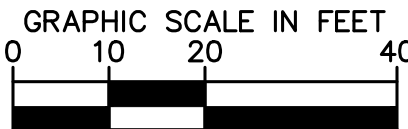
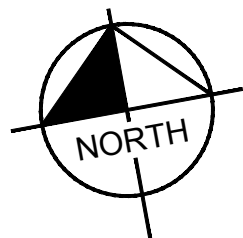


PLANT SCHEDULE

LARGE SHADE TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	CAL	HEIGHT	
	QPH	2	QUERCUS PHELLOS 'HIGHTOWER'	WILLOW OAK	B&B	3" CAL	14'-16' HT.	
	UPA	8	ULMUS PARVIFOLIA 'ELMER II'	ALLEE LACEBARK ELM	B&B	3" CAL	14'-16' HT.	
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT	SPACING	
	ITV	8	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	3 GAL	24" MIN.	48" o.c.	
	IVN	25	ILEX VOMITORIA 'NANA'	DWARF YAUPON HOLLY	3 GAL	24" MIN.	48" o.c.	
	PLZ	12	PRUNUS LAUROCERASUS 'ZABELIANA'	ZABEL LAUREL	3 GAL	24" MIN.	48" o.c.	
GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT	WIDTH	SPACING
	BGB	63	BOULETELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	1 GAL	18"	18"	18" o.c.
	CDT	8,331 SF	CYNODON DACTYLON 'TIF 419'	BERMUDA GRASS	SOD			
	LBB	159	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	1 GAL	12"	12"	18" o.c.
	MUC	22	MUHLenbergia CAPILLARIS	PINK MUHLY	1 GAL	18"	18"	24" o.c.

LANDSCAPE REQUIREMENTS & CALCULATIONS

New Hanover County, NC					
AREA TO BE LANDSCAPED	CODE REQUIREMENT	LOCATION	TOTAL QUANTITY REQUIRED	TOTAL QUANTITY PROVIDED	CODE SECTION
PARKING LOT LANDSCAPING	INTERIOR LANDSCAPED AREAS SHALL BE EQUAL TO 8% OF THE TOAL VEHICULAR USE AREA.	PARKING LOT	10,350 sf x 0.08 = 828 SF ITNERIOR LANDSCAPED AREA REQUIRED	2,530 SF INTERIOR LANDSCAPING	5.4.6.D
	ONE PLANTED OR EXISTING TREE SHALL BE REQUIRED FOR EVERY 144 SF OF TOTAL REQUIRED INTERIOR LANDSCAPED AREA, WITH A MINIMUM OF ONE TREE IN EACH ISLAND. A MINIMUM OF 75% OF REQUIRED TREES SHALL BE CANOPY TREES.		828 SF / 144 = 6 TREES REQUIRED	5 CANOPY TREES 1 UNDERSTORY TREE	5.4.6.D
STREET YARD	STREET YARD LANDSCAPING SHALL BE REQUIRED ALONG ALL STREET FRONTAGES. 25 SF OF STREET YARD AREA IS REQUIRED FOR EVERY LINEAR FOOT OF STREET YARD FRONTAGE. STREET YARD MINIMUM WIDTH IS 12.5 FEET. FOR EVERY 600 SF OF STREET YARD AREA, THE FOLLOWING LANDSCAPING SHALL BE PROVIDED: ONE CANOPY TREE, 3" CALIPER IN SIZE AND SIX SHRUBS, 12" IN HEIGHT AT PLANTING	CAROLINA BEACH ROAD	78 LF x 25 = 1,950 SF 1,950 SF / 600 = 3.25 3.25 x 1 = 4 TREES REQUIRED 3.25 x 6 = 20 SHRUBS REQUIRED	4 TREES 20 SHRUBS	5.4.7.B
FOUNDATION PLANTINGS	FOUNDATION PLANTING AREA SHALL BE A MINIMUM OF 12 PERCENT OF THE AREA OF THE BUILDING FACE ADJACENT TO A PARKING AREA OR INTERNAL DRIVE. PORTIONS OF BUILDINGS WITH DRIVE-UP SERVICES ARE EXEMPT FROM THESE REQUIREMENTS.	BUILDING FOUNDATION	2,929 SF x 0.12 = 352 SF REQUIRED	545 SF FOUNDATION PLANTING	5.4.8



LIMITS OF DISTURBANCE: 0.70 AC

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VALVOLINE
CAROLINA BEACH
PREPARED FOR
VALVOLINE

NEW HANOVER COUNTY NORTH CAROLINA

LANDSCAPE PLAN

KHA PROJECT
018005007
DATE
09/14/2020
SCALE AS SHOWN
DESIGNED BY VAO
DRAWN BY VAO
CHECKED BY MKB



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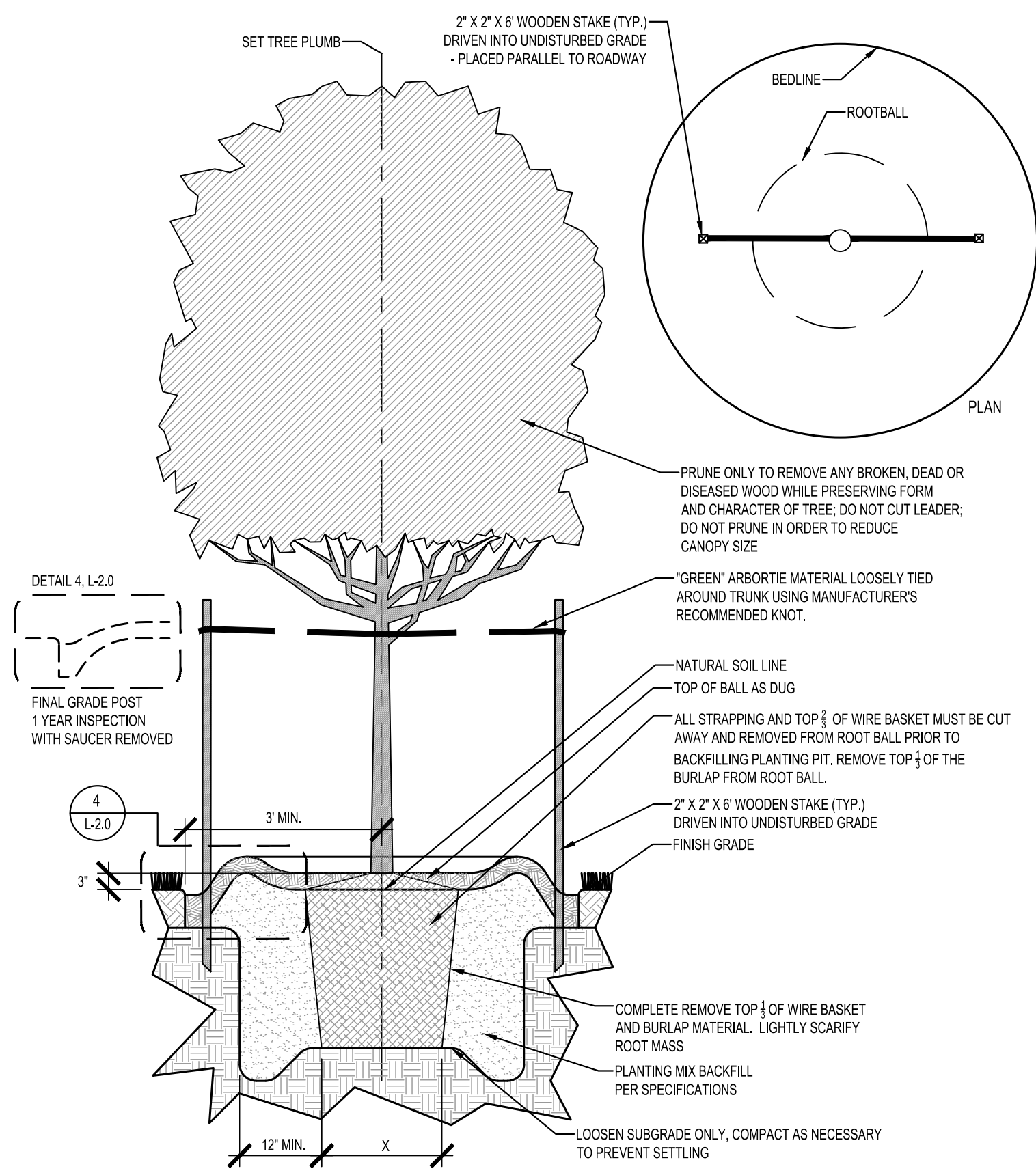
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REVISIONS

BY
DATE

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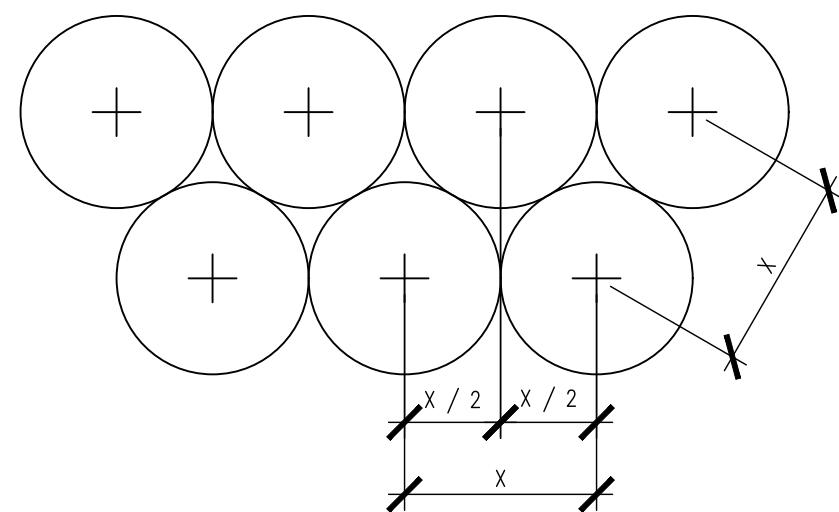
- | | |
|----------------------|---|
| TREE PLANTING NOTES: | |
| 1. | SET TREE MIN. 3" ABOVE SURROUNDING FINISH GRADE. MEASURED AT BASE OF TRUNK. |
| 2. | LEAVE AREA ADJACENT TO NEWLY PLANTED TREES AND SHRUBS UNMULCHED TO SIX (6) INCHES FROM TRUNK. |



1
L-2.0

TYPICAL TREE PLANTING & GUYING

PLAN & SECTION
SCALE: 1/2"=1'-0"



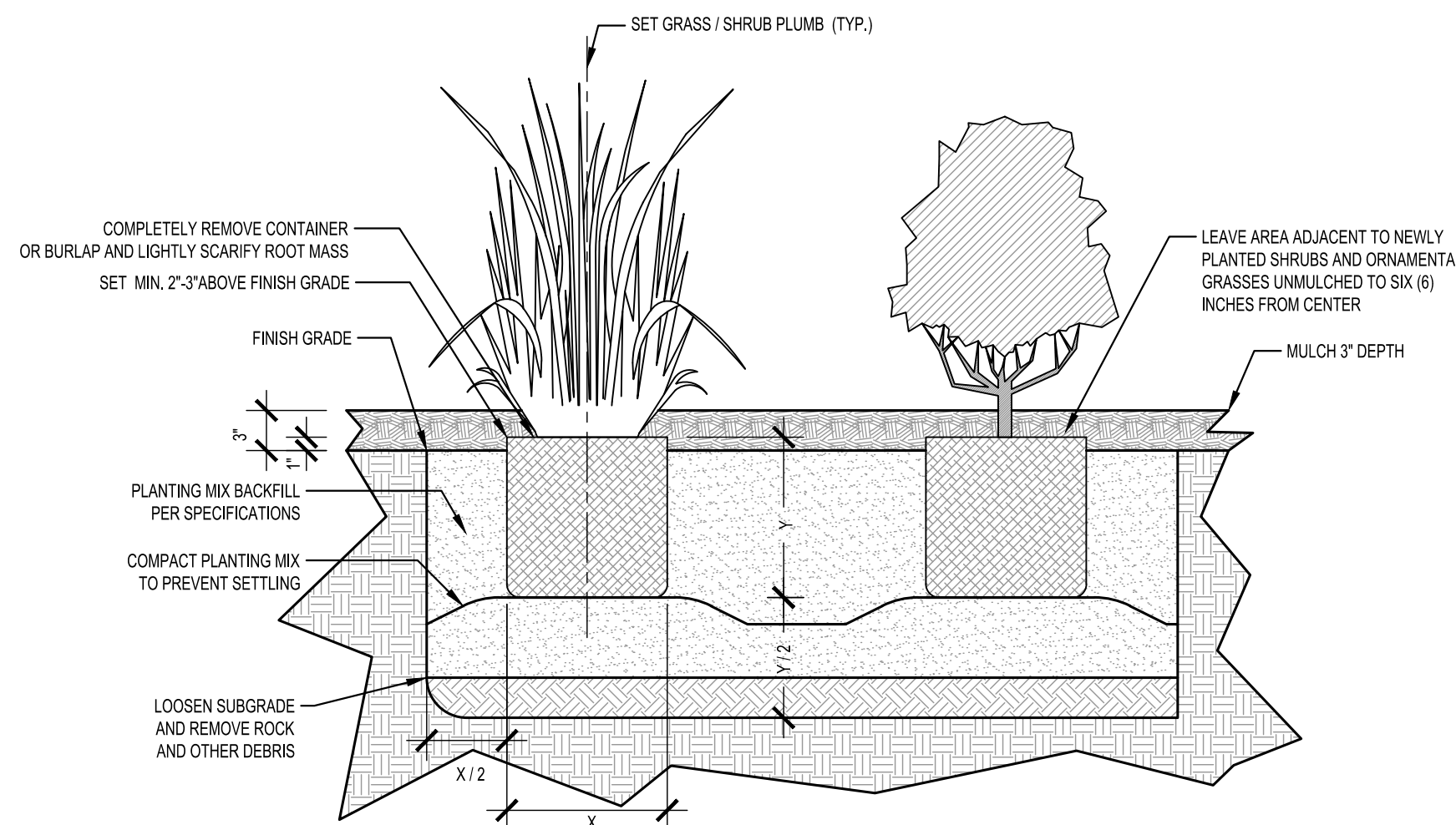
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|----------------------|--|
| PLANT SPACING NOTES: | |
| 1. | SEE PLANTING PLAN FOR SHRUB AND GROUND COVER AREAS. |
| 2. | PLANT MATERIAL SHALL BE INSTALLED IN STRAIGHT AND PARALLEL ROWS UNLESS OTHERWISE SHOWN ON DRAWINGS |
| 3. | SEE PLANTING PLAN AND / OR PLANT SCHEDULE FOR ACTUAL PLANT SPACING. |


3
L=2.0

TYPICAL STAGGERED ROW PLANT SPACING

PLAN
SCALE: 1/2"=1'-0"

- GENERAL LANDSCAPE NOTES:
1. ALL PLANT MATERIAL PRICING SHALL INCLUDE MULCH, BED PREPARATION, AND STAKING.
 2. ALL PLANTING BEDS SHALL RECEIVE 2" (THREE INCHES) OF MULCH.
MULCH TYPE FOR PROJECT: DOUBLE SHREDDED HARDWOOD HARDWOOD DESIGNER MULCH IN DARK BROWN OR CURRENT COUNTY STANDARD
 3. PLANT MATERIAL SPACING SHOWN ON LANDSCAPE PLANS SHALL OVERRIDE TYPICAL PLANT SPACING INDICATED ON PLANT SCHEDULE. LANDSCAPE CONTRACTOR RESPONSIBLE FOR VERIFYING ALL PLANT SPACING AND MAKING MINOR FIELD ADJUSTMENTS DUE TO UTILITY CONFLICTS.
 4. ALL SHRUBS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT 'AMERICAN STANDARDS FOR NURSERY STOCK' PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.)
 5. SOIL ANALYSIS SHALL BE OBTAINED PRIOR TO PLANTING. SOIL SHALL BE AMENDED AS RECOMMENDED.
 6. SEE PLAN FOR SPACING

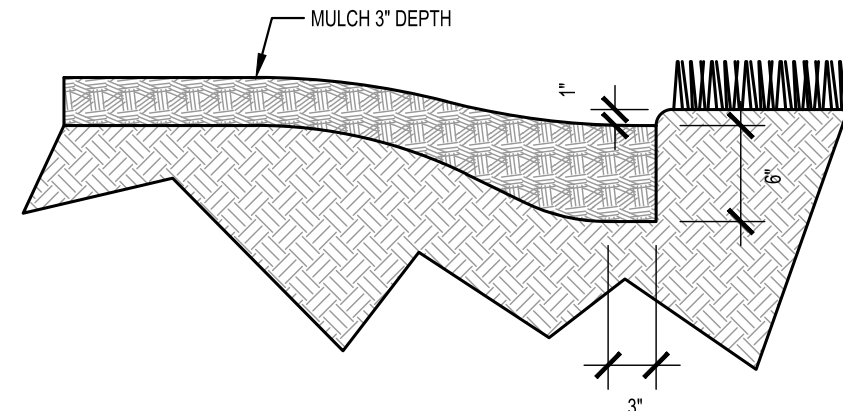




2
L-2.0

SHRUB & ORNAMENTAL GRASS PLANTING

SECTION
SCALE: 1"=1'-0"



- PLANTING BED TRENCH EDGING NOTE:
1. TRENCH EDGE SHALL BE LOCATED BETWEEN PLANTING BED AND ALL TURF OR NATIVE GRASS AREAS.
 2. TRENCH EDGE SHALL BE CONSTRUCTED ALONG ALL HARDSCAPE AREAS FOR SIMILAR CONDITION.
 3. MAINTAIN POSITIVE DRAINAGE IN ALL PLANTING BEDS.
 4. SEE GENERAL LANDSCAPE NOTES FOR TYPE OF MULCH.

4 PLANTING BED TRENCH EDGING

L-2.0

SECTION
SCALE: 1"=1'-0"

GENERAL LANDSCAPE NOTES:

3. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
2. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.
3. ALL TREES MUST HAVE A STRAIGHT TRUNK AND FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL TREES LOCATED WITHIN VEHICLE SIGHT TRIANGLES SHALL BE BRANCHED MIN. 8' (MEASURED FROM ADJACENT PROJECTED CURB LINE ELEVATION) PER ANSI Z60.1 STANDARDS FOR HEIGHT OF BRANCHING - STREET TREES.
7. ALL PLANTING AREAS MUST BE COMPLETELY MULCHED AS SPECIFIED. MULCH TO BE 3 INCHES OF DOUBLE SHREDDED HARDWOOD DESIGNER MULCH IN DARK BROWN.
8. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FOR COORDINATING ALL UTILITY ADJUSTMENTS WITH FINAL FINISH GRADE. ALL UTILITIES SHALL SIT FLUSH WITH FINISH GRADES (BOTH PAVED AND LANDSCAPED SURFACES).
9. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK. ANY DISCREPANCIES BETWEEN QUANTITIES ON PLAN AND PLANT LIST SHALL BE BROUGHT TO THE ATTENTION OF NEW HANOVER COUNTY INSPECTOR AND ANY FIELD ADJUSTMENTS OR QUANTITY ADJUSTMENTS MUST BE AUTHORIZED PRIOR TO PLANTING.
10. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, WEEDING, FERTILIZING, ETC.) OF THE PLANTING AREAS AND LAWN UNTIL SUBSTANTIAL COMPLETION.
11. THE CONTRACTOR SHALL COMPLETELY WARRANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE WARRANTEE PERIOD.
12. THE LANDSCAPE ARCHITECT SHALL APPROVE THE STAKING LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION. CONTRACTOR SHALL CONTACT THE PROJECT LANDSCAPE ARCHITECT A MINIMUM OF ONE(1) WEEK IN ADVANCE TO SCHEDULE STAKING.
13. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
14. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING ALL PLANT SCHEDULE SPECIFICATIONS.
15. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
16. ALL SHRUB, GROUND COVER AND PERENNIAL PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH DOUBLE SHREDDED HARDWOOD MULCH IN DARK BROWN OR CURRENT COUNTY STANDARD TO A DEPTH OF THREE (3) INCHES. ANY EXISTING LANDSCAPE BEDS THAT ARE DISTURBED MUST BE MULCHED TO MATCH EXISTING MULCH FOUND WITHIN LANDSCAPE BED.
17. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD.
18. SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.
19. ALL PLANT MATERIAL QUANTITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE COVERAGE OF ALL PLANTING BEDS AT SPACING SHOWN.
20. THE TOP OF ALL ROOT BALLS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE, AS BORN TO PREVIOUS GRADE AND GROWING CONDITIONS.
21. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND SPACING FOR TREE AND THE NEW HANOVER COUNTY UNIFIED DEVELOPMENT ORDINANCE (UDO). FAILURE TO INSTALL PLANT MATERIAL PER THIS PLAN WILL JEOPARDIZE ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT MATERIAL.
23. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES & ORDINANCES REGARDING LANDSCAPING. GENERAL CONTRACTOR IS TO CLEAN THE ENTIRE SITE OF ALL CONSTRUCTION DEBRIS PRIOR TO FINAL INSPECTION.
24. THE CONTRACTOR SHALL INSTALL NON-WOVEN GEOTEXTILE UNDER PLANTING BED MULCH IN ALL LANDSCAPE BEDS TO PREVENT WEED GROWTH.

SURVEY NOTE:
ALL EXISTING TOPOGRAPHICAL, BOUNDARY, TREE INFORMATION WAS PROVIDED WITHIN A TOPOGRAPHICAL SURVEY PREPARED BY DANFORD & ASSOCIATES, 4002 1/2 OLEANDER DRIVE SUITE 203, WILMINGTON, NC, 28403, ON 08/11/20.
HORIZONTAL DATUM: NAD83 (2001)
VERTICAL DATUM: NAVD 1988

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCDEQ, NEW HANOVER COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS; MORE STRINGENT SHALL GOVERN.

LIMITS OF DISTURBANCE: 0.70 AC



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LANDSCAPE DETAILS

KHA PROJECT 018005007	DATE 09/14/2020	SCALE AS SHOWN	DESIGNED BY VAO	DRAWN BY VAO	CHECKED BY MKB
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Kimley»Horn
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