TOWN OF NAGS HEAD, NORTH CAROLINA

PH 8A W. SIDE MULTI-USE PATH PLAN

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

THE APPROVED SEDIMENT AND EROSION CONTROL (SECP) PLAN SHALL BE IMPLEMENTED PRIOR TO ANY LAND-DISTRURBING ACTIVITY ON THE CONSTRUCTION SITE. ANY MODIFICATIONS TO THE APPROVED SECP PLAN MUST BE REVIEWED AND APPROVED BY A NCDEQ DEMLR REPRESENTATIVE. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED PER THE APPROVED PLAN AND THOSE SET FORTH IN THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

ACTIONS MUST BE TAKEN TO MINIMIZE THE TRACKING OF MUD AND SOIL FROM CONSTRUCTION AREAS ONTO PUBLIC ROADWAYS. SOIL TRACKED ONTO THE ROADWAY SHALL BE REMOVED DAILY.

SOIL STOCKPILES SHALL BE LOCATED AWAY FROM THE STREAMS, PONDS, SWALES, AND CATCH BASINS. STOCKPILES SHALL BE SEEDED, MULCHED, AND ADEQUATELY CONTAINED THROUGH THE USE OF SILT FENCE.

SEDIMENT-LADEN GROUNDWATER ENCOUNTERED DURING TRENCHING, BORING OR OTHER ACTIVITIES SHALL BE PUMPED TO A SEDIMENT TRAPPING DEVICE PRIOR TO BEING DISCHARGED INTO A STREAM, POND, SWALE, OR CATCH BASIN.

WHERE CONSTRUCTION OR LAND DISTURBING ACTIVITY WILL OR HAS TEMPORARILY CEASED ON ANY PORTION OF A SITE, TEMPORARY SITE STABILIZATION MEASURES SHALL BE REQUIRED AS SOON AS PRACTICAL, BUT NO LATER THAN 14 CALENDAR DAYS AFTER THE ACTIVITY HAS CEASED. PROVIDE A GROUNDCOVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDER DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

BENCHMARK

NOTE: ALL ELEVATIONS ARE BASED ON NAVD 1988 DATUM AND WERE DERIVED FROM FIELD SURVEY DATA ACQUIRED BY STYONS SURVEYING SERVICES, DATE 8-31-18. EACH TEMPORARY BENCH MARK SET IS COMPRISED OF A SS NAIL & WASHER EMBEDDED IN THE EXISTING PAVEMENT.

TBM #1 - "SOUNDSIDE RD." N 819,948.814' E 2,998,530.124' ELEV. 9.74'

TBM #2 - "DUNE ST." N 818,857.888' E 2,999,080.136' ELEV. 9.61'

TBM #3 - "OB CANCER CENTER" N 818,294.295' E 2,999,364.237' ELEV. 10.41'

TBM #4 - "GRACE LUTHERAN" N 817,645.602' E 2,999,610.331' ELEV. 12.31'

TBM #5 - "DANUBE ST." N 816,423.428' E 3,000,205.491' ELEV. 8.80'

UTILITY NOTE

ALL UTILITIES ON THESE PLANS ARE APPROXIMATE. INDIVIDUAL SERVICE LINES ARE NOT SHOWN. THE CONTRACTOR OR SUBCONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER NORTH CAROLINA 811 (TOLL FREE PHONE NO. 1-800-623-4949) FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION ON THIS PROJECT. THIS NUMBER WAS ESTABLISHED TO PROVIDE ACCURATE LOCATIONS OF EXISTING BELOW GROUND UTILITIES (I.E. CABLES, ELECTRIC WIRES, GAS & WATER LINES). WHEN CONTACTING THE NORTH CAROLINA811 CALL CENTER, PLEASE STATE THE WORK TO BE DONE IS FOR A PROPOSED MSD SEWER OR DRAINAGE FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL UTILITY REQUIREMENTS SET FORTH ON THE PLANS AND IN THE TECHNICAL SPECIFICATIONS & SPECIAL PROVISIONS.

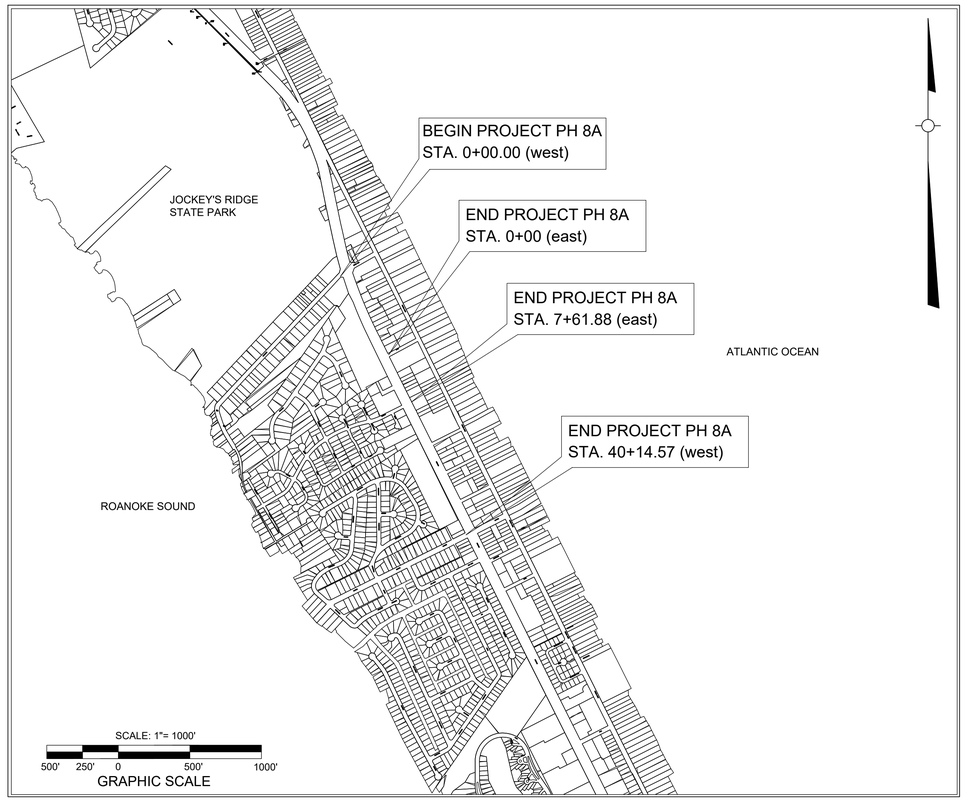
North Carolina
One-Call Center Inc.
811
Know what's below
Call before you dig.

GENERAL NOTES

THE INFORMATION DESCRIBED HEREON IS BELIEVED TO BE ACCURATE, COMPLETE, AND CURRENT. THE TOWN OF NAGS HEAD MAKES NO WARRANTY AS TO THE ACCURACY, COMPLETENESS OR CURRENCY OF THE CONTENT. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THIS INFORMATION PRIOR TO RELYING ON IT. THE CONTENT OF THESE DOCUMENTS MAY INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. IF SUCH CONDITIONS EXIST, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER PRIOR TO PROCEEDING WITH THE SCHEDULED WORK UNTIL AUTHORIZATION TO PROCEED HAS BEEN GRANTED.

ALL WORK SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS.

PROJECT LOCATION MAP



INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
C1	COVER
C2	EXISTING FEATURES PLAN/ DEMOLITION PLAN
C3	EXISTING FEATURES PLAN/ DEMOLITION PLAN
C4	EXISTING FEATURES PLAN/ DEMOLITION PLAN
C5	PLAN/PROFILE STA 0+00 - 6+49.58
C6	PLAN/PROFILE STA 6+50 - 12+99.16
C7	PLAN/PROFILE STA 13+00 - 19+28.18
C8	PLAN/PROFILE STA 19+30 - 25+74.58
C9	PLAN/PROFILE STA 25+75 - 32+24.16
C10	PLAN/PROFILE STA 32+22 - 38+64.37
C11	PLAN/PROFILE STA 38+64 - 40+14.57
C12	MULTI-USE PATH CONSTRUCTION DETAILS
C13	SEDIMENTATION & EROSION CONTROL DETAILS
C14	WATERLINE CONSTRUCTION DETAILS
C15	TRAFFIC CONTROL DETAILS
C16	TRAFFIC CONTROL DETAILS
C17	ELEVATED WALKWAY DETAILS

LEGEND (CONT'D)

ROAD SURFACE MATERIAL

SYMBOL	DESCRIPTION
	EXISTING PAVEMENT/VEGATATION SCHEDULED FOR REMOVAL
	EXISTING CONCRETE SURFACE
	EXISTING ASPHALT ROADWAY SURFACE (EXISTING CONDITIONS) PROPOSED CONCRETE SURFACE ADDITION (PLAN/PROFILE)

GENERAL NOTES

1. DEVELOPER: TOWN OF NAGS HEAD
   P.O. BOX 99
   NAGS HEAD, NC 27959
2. OWNER: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
   1929 ROAD STREET
   ELIZABETH CITY, NC 27939
3. TOTAL DISTURBED AREA: 144,342 SF = 3.32± AC.
4. NO A.C.O.E. JURISDICTIONAL 404 WETLANDS ARE KNOWN TO EXIST WITHIN THE LIMITS OF THE SCHEDULED WORK.
6. PRIOR TO ANY LAND DISTURBING ACTIVITIES COMMENCING, A SEDIMENT & EROSION CONTROL PERMIT SHALL BE SECURED THROUGH THE NCDENR DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.
7. EXISTING VEGETATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE.
8. AN NCDOT RIGHT-OF-WAY ENCROACHMENT AGREEMENT SHALL BE SECURED PRIOR TO PERFORMING ANY CONSTRUCTION WITHIN THE STATE RIGHT-OF-WAY.
9. A WRITTEN EXCLUSION FROM NCDEQ DMLR WILL NEED TO BE ACQUIRED FOR STORMWATER MANAGEMENT AND SEDIMENTATION & EROSION CONTROL PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITIES.

LEGEND

SURFACE FEATURES:

EXISTING	DESCRIPTION
	BUILDING LINE (EXISTING)
	DITCH CENTERLINE (EXIST.)
	CURB/PAVEMENT/SIDEWALK (EX)
	FENCE (EXISTING)
	VEGETATION/TREELINE
	RETAINING WALL (EXISTING)

SURVEY:

	CENTERLINE (EXISTING)
	CONTOUR (DEPRESSION)
	CONTOUR (INDEX) (EXIST.)
	EASEMENT
	PROPERTY LINE (EXISTING)
	RIGHT-OF-WAY (CURRENT)
	BOUNDARY LINE
	EDGE OF PAVEMENT (EXISTING)

UTILITIES (EXISTING):

FO	FIBER OPTIC (BURIED)
CTV	CABLE TELEVISION (BURIED)
FM	FORCE MAIN
GAS	GAS
OHE	POWER (AERIAL)
UGE	POWER (BURIED)
SS	SANITARY SEWER
12"CMP	STORM DRAINAGE
T	TELEPHONE (BURIED)
OHT	TELEPHONE (AERIAL)
W	WATER

CONSTRUCT	DESCRIPTION
	DITCH CENTERLINE
	CURB(PROP)
	CURB/PAVEMENT/SIDEWALK
SF SF	SILT FENCE/CONST. LIMITS
* * *	CONTOUR (INDEX)
	GUARDRAIL

GAS/POWER/TELEPHONE

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
		PAD MOUNTED TRANSFORMER
		POWER VAULT
		UTILITY POLE
		POWER POLE
		UTILITY POLE ANCHOR
		LIGHT POLE
		TELEPHONE PEDESTAL
		TELEPHONE VAULT

SURVEY

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
		BENCH MARK
		BLOCK CORNER
		IRON PIPE
		EX. IRON REBAR
		CONCRETE MONUMENT
		MONUMENT (IN CASE)
		SPOT ELEVATION

DRAINAGE

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
		STORM DRAIN CATCH BASIN
		STORM DRAIN INLET
		STORM DRAIN PIPE
		STORM DRAIN JUNCTION
25 L.F. 12"		STORM PIPE(PROPOSED) DOUBLE LINE TO SIZE OF PIPE DIAMETER

WATER

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
	GP	GUARD POST
FH	FH	FH
GV		WATER VALVE
WM	WM	WATER METER

NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

THE TOWN OF NAGS HEAD 1961

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
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NOTES:
ISSUED FOR BID

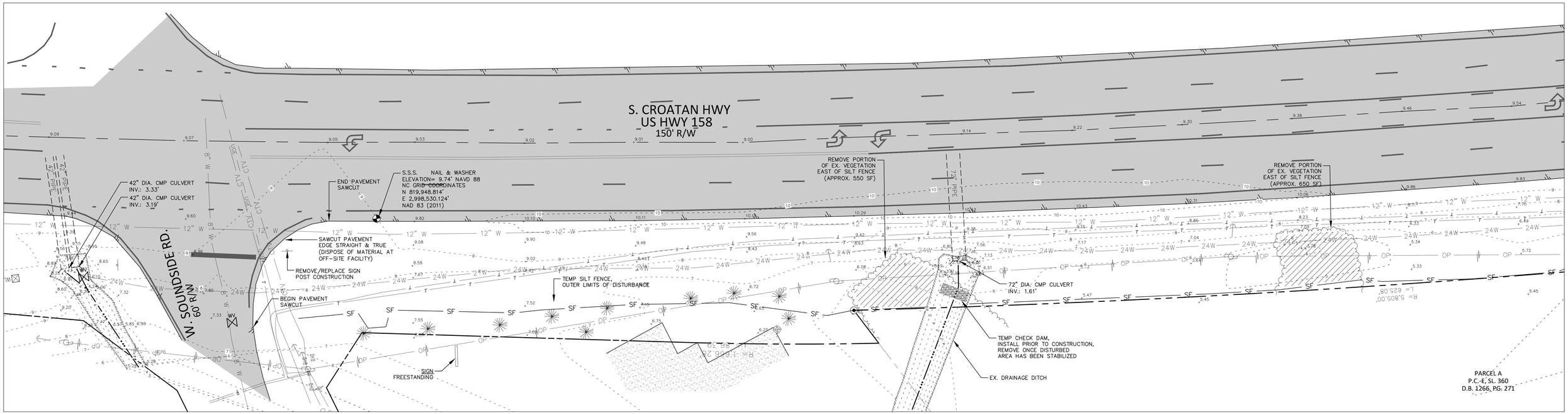
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: AS NOTED
VERTICAL:

DRAWING TITLE:
COVER SHEET

DRAWING NO.: C-1

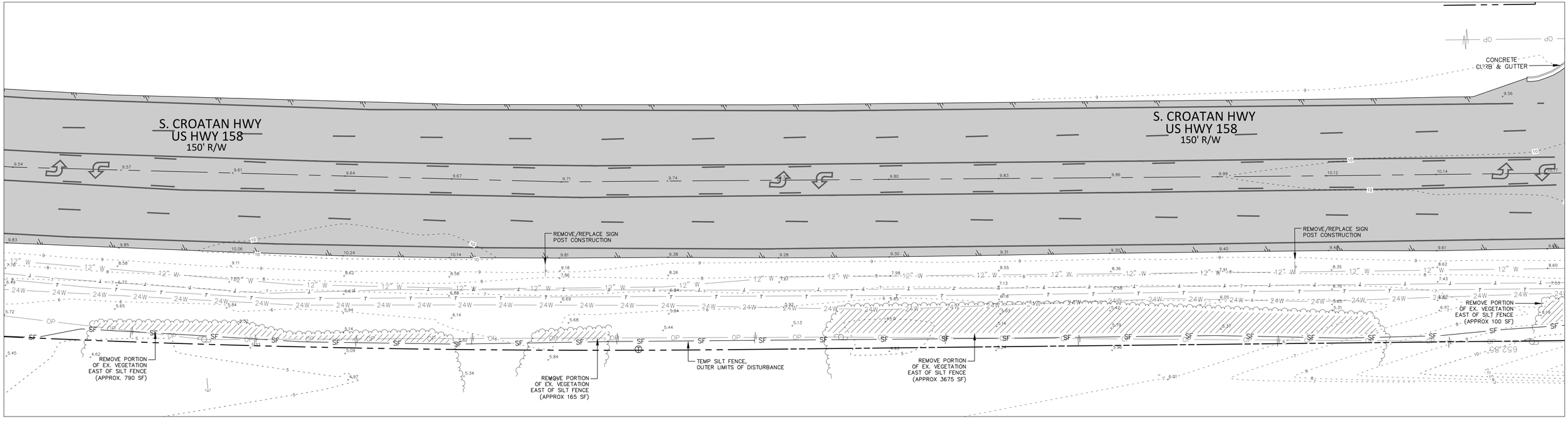
SHEET NO.: SHEET C1 OF 17



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (SOUNDSIDE RD.) (PLAN VIEW)

CONTINUATION BELOW



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (PLAN VIEW)

CONTINUATION SHEET C3

NO.	DATE	REVISION	APPR'D	DATE
1	11-8-19	REV'D LIMITS OF DISTURBANCE	DMR	
2	11-13-19	REM'D GUY WIRE/SAWCUT NOTED BETWEEN STA 2+08-5+00	DMR	
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-8-2019

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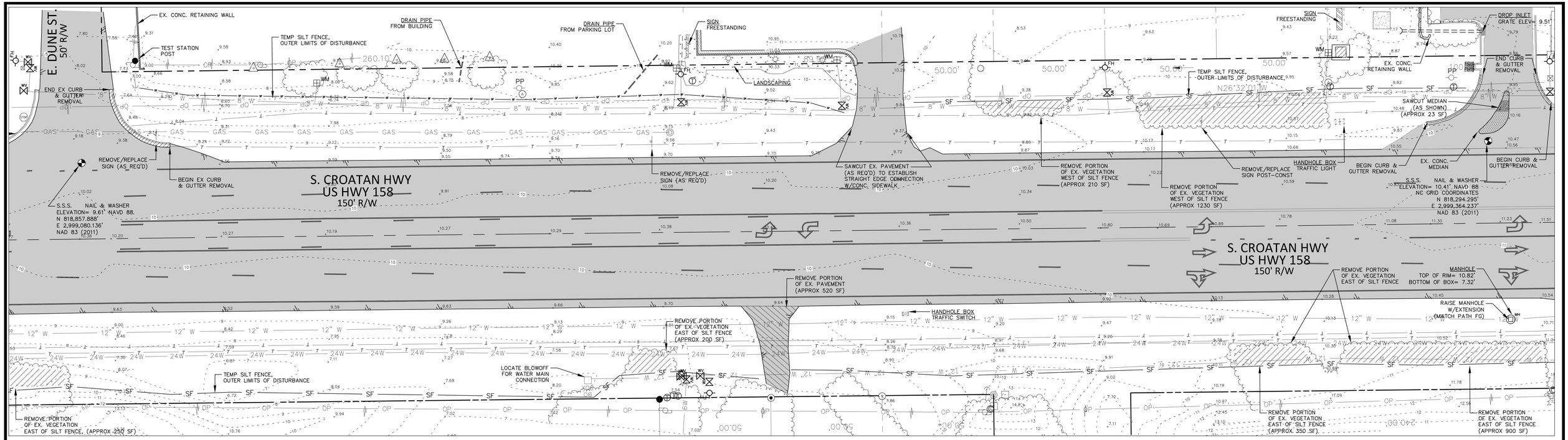
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: 1" = 20'
VERTICAL:

DRAWING TITLE:
EXISTING FEATURES PLAN/ DEMOLITION PLAN

DRAWING NO.: C-2

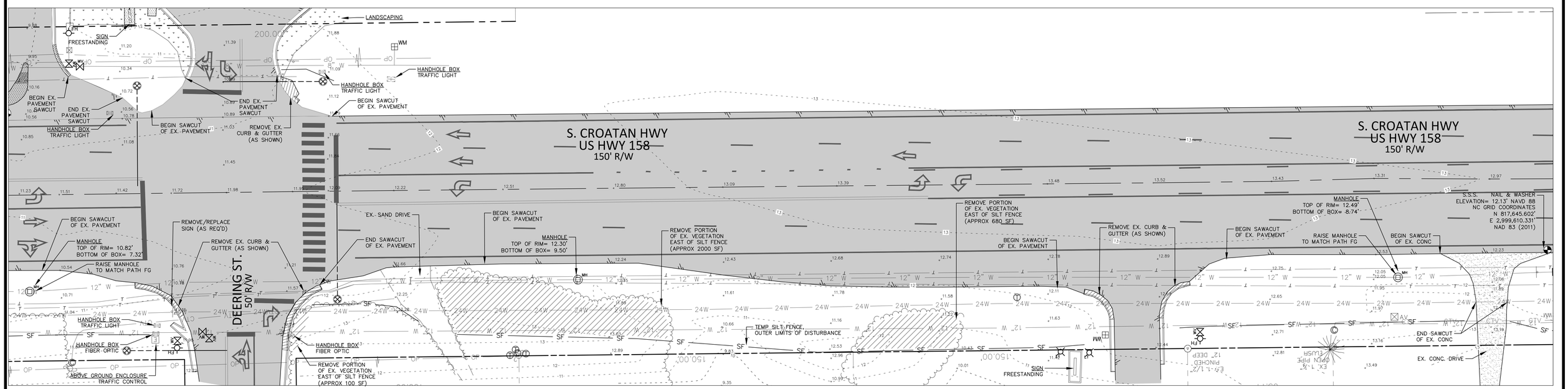
SHEET NO.: SHEET 2 OF 17



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (DUNE ST.) (PLAN VIEW)

CONTINUATION BELOW



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (SOUNDSIDE RD.) (PLAN VIEW)

CONTINUATION SHEET C4

NO.	DATE	REVISION	APPR'D DATE
			APPROVALS

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN

11-1-2019

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NOTES:

ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

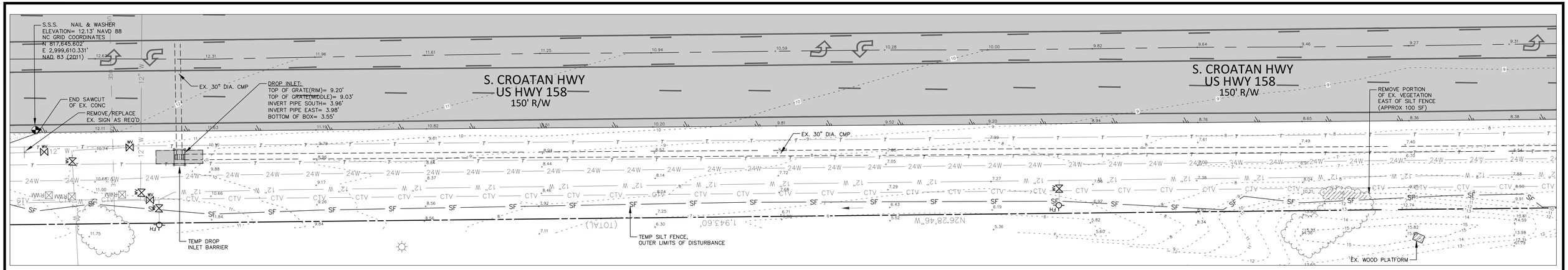
SCALE: HORIZONTAL: 1" = 20'
VERTICAL:

DRAWING TITLE:

EXISTING FEATURES PLAN/ DEMOLITION PLAN

DRAWING NO.: C-3

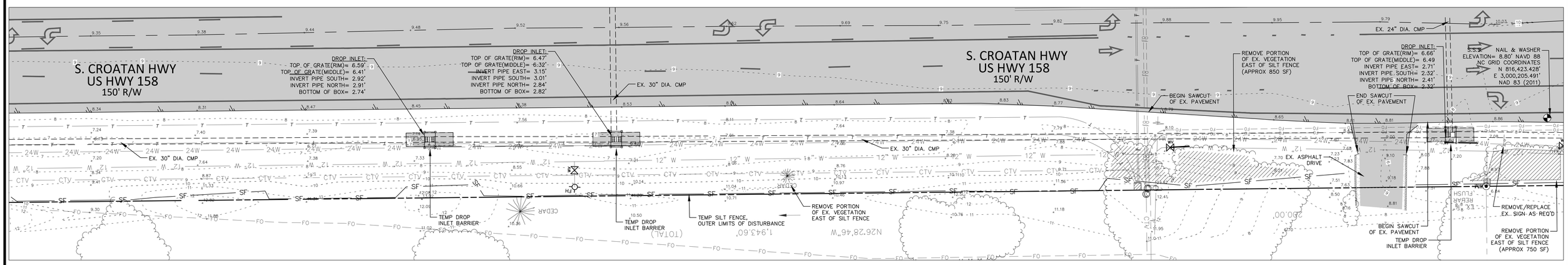
SHEET NO.: SHEET 3 OF 17



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (PLAN VIEW)

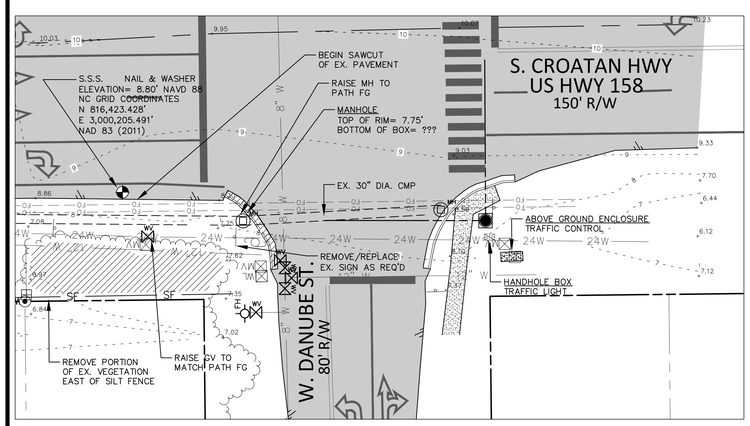
CONTINUATION BELOW



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (PLAN VIEW)

CONTINUATION BELOW



US HWY 158 WESTERN RIGHT-OF-WAY MARGIN

SCALE: HOR.: 1"=20' (W. DANUBE ST.) (PLAN VIEW)

NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

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ISSUED FOR BID

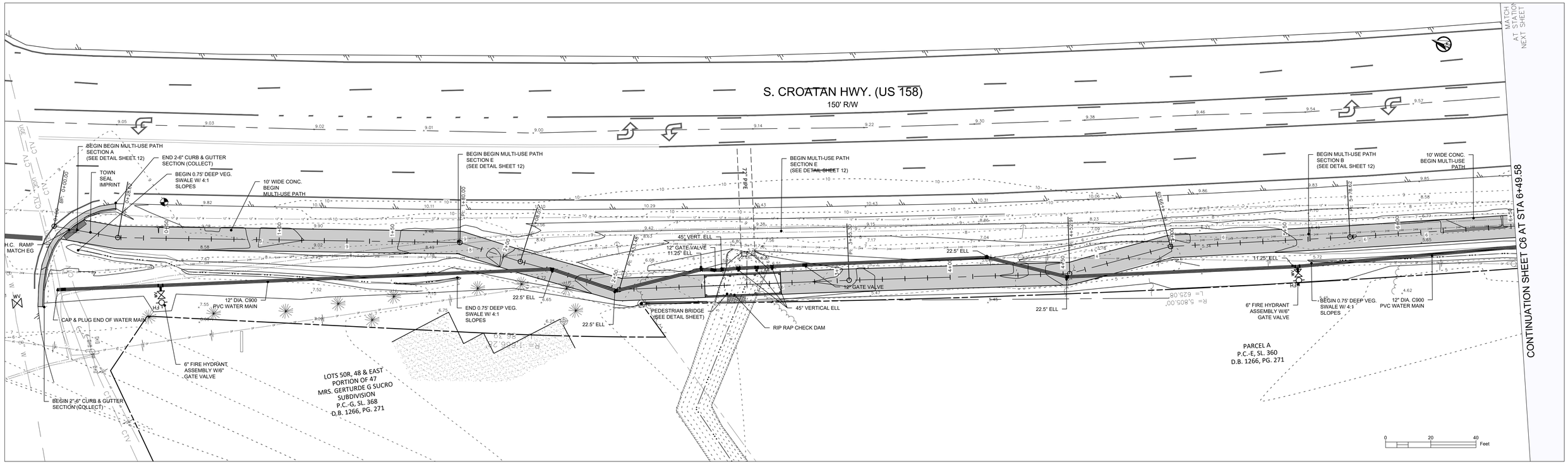
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

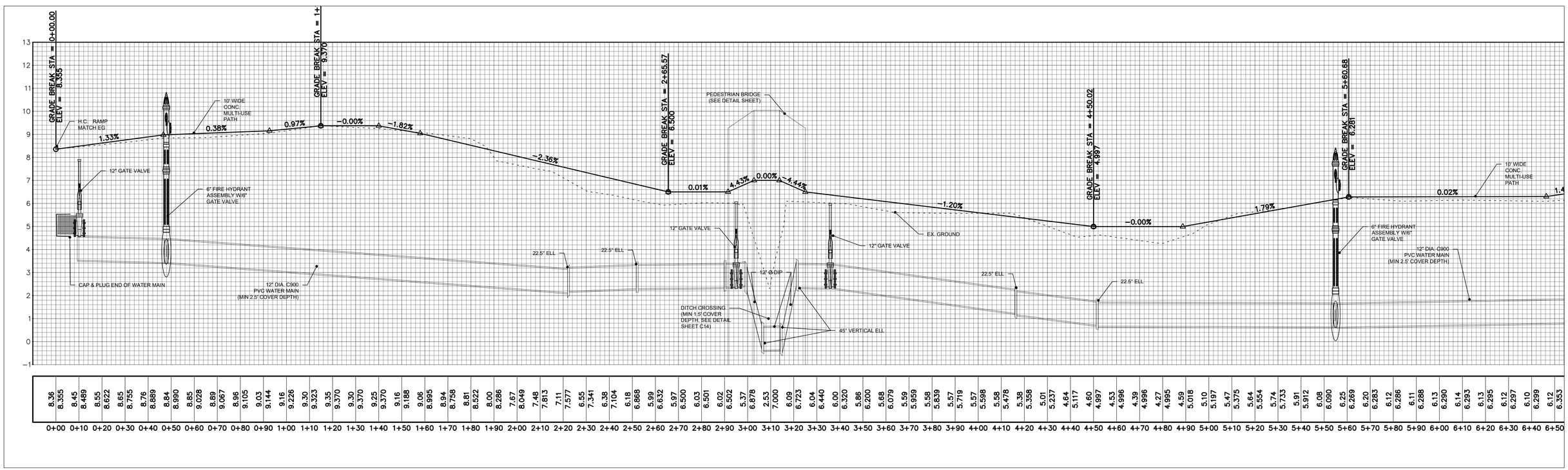
SCALE: HORIZONTAL: 1" = 20'
VERTICAL:

DRAWING TITLE:
EXISTING FEATURES PLAN/ DEMOLITION PLAN

DRAWING NO.: C-4

SHEET NO.: SHEET 4 OF 17





NO.	DATE	REVISION	APPR'D DATE
1	11-8-19	ADDED PEDESTRIAN BRIDGE	DMR
2	11-25-19	REV'D PEDESTRIAN BRIDGE, PROFILE BAND FINISH GRADES	DMR

APPROVALS

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-25-2019

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NOTES:
ISSUED FOR BID

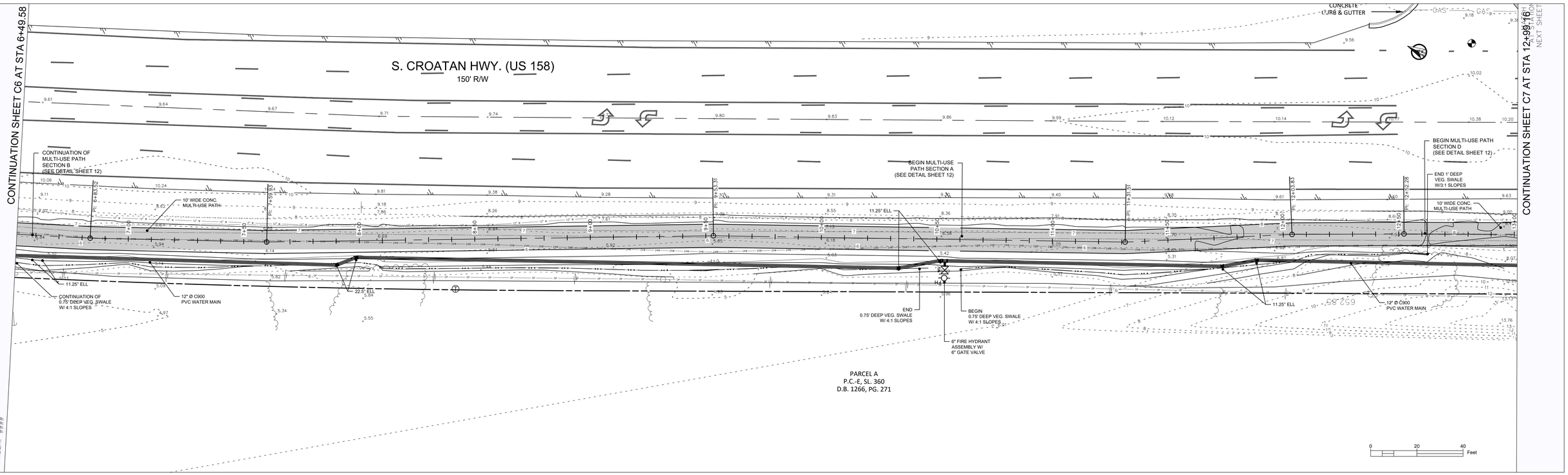
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE BEGIN MULTI-USE PATH PLAN

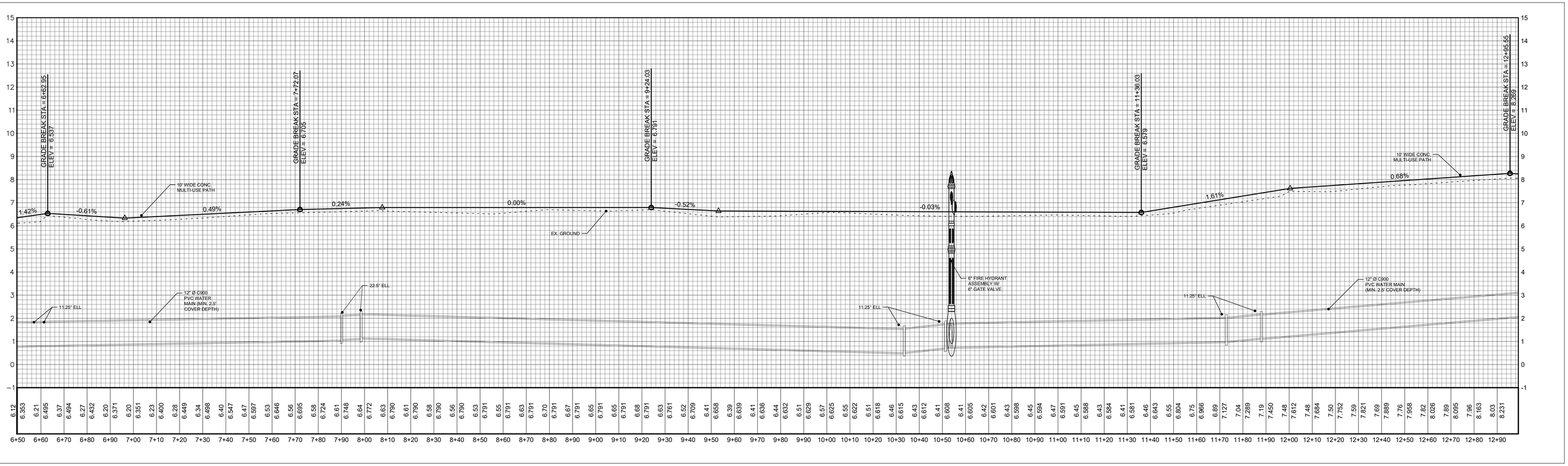
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

DRAWING TITLE:
PLAN/PROFILE SHEET
STA 0+00 - 6+49.58

DRAWING NO.: C-5

SHEET NO.: SHEET 5 OF 17





NO.	DATE	REVISION	APPR'D	DATE
1	11-25-19	REV'D PROFILE BAND FINISH GRADES	DMR	

APPROVALS

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. BYRAN

11-25-2019

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NOTES:
ISSUED FOR BID

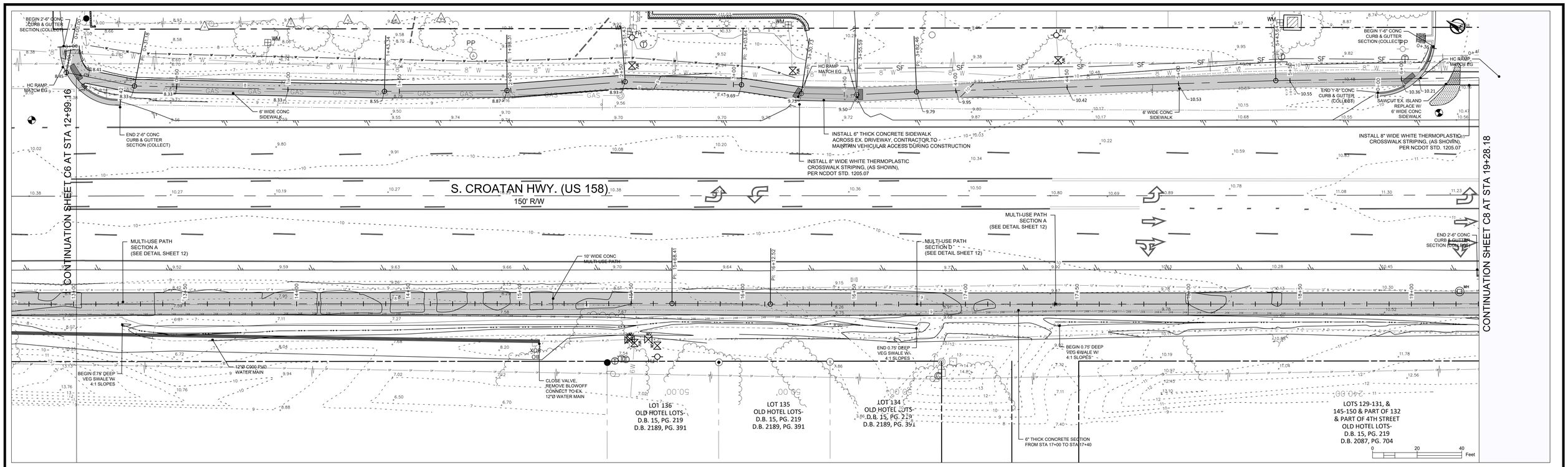
CAPITAL IMPROVEMENT PROJECT FY 19/20
PHASE 8A W. SIDE MULTI-USE PATH PLAN

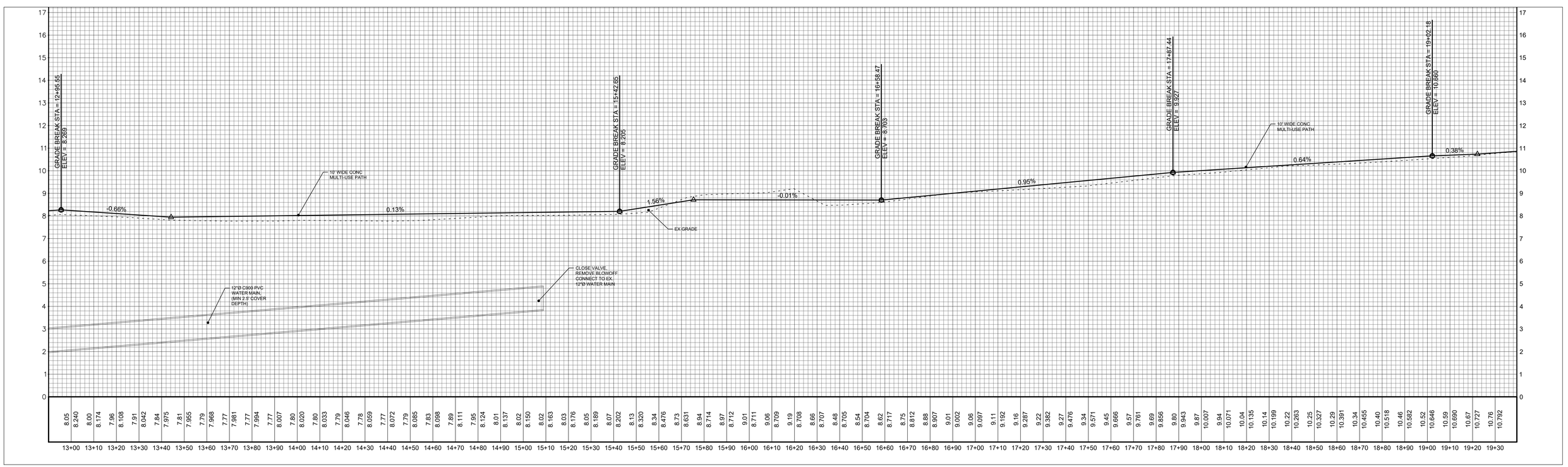
SCALE: HORIZONTAL: 1"= 20'
VERTICAL: 1"= 2'

DRAWING TITLE:
PLAN/PROFILE SHEET STA 6+50 - 12+99.16

DRAWING NO.: C-6

SHEET NO.: SHEET 6 OF 17





NO	DATE	REVISION	APPR'D	DATE
1	11-1-19	REM'D DRIVEWAY CONNECTION	DMR	
2	11-25-19	ADDED FINISH GRADE ELEVATIONS TO 5' SW STA 0+00-3+30	DMR	
2	12-2-19	ADDED STRIPING AT STA 3+00 TO 3+30, THICKENED CONC.	DMR	
		FROM STA 17+00 -STA 17+40, rREVD SIDEWALK TO 6' WIDE	DMR	

APPROVALS

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN

11-25-2019

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NOTES:
ISSUED FOR BID

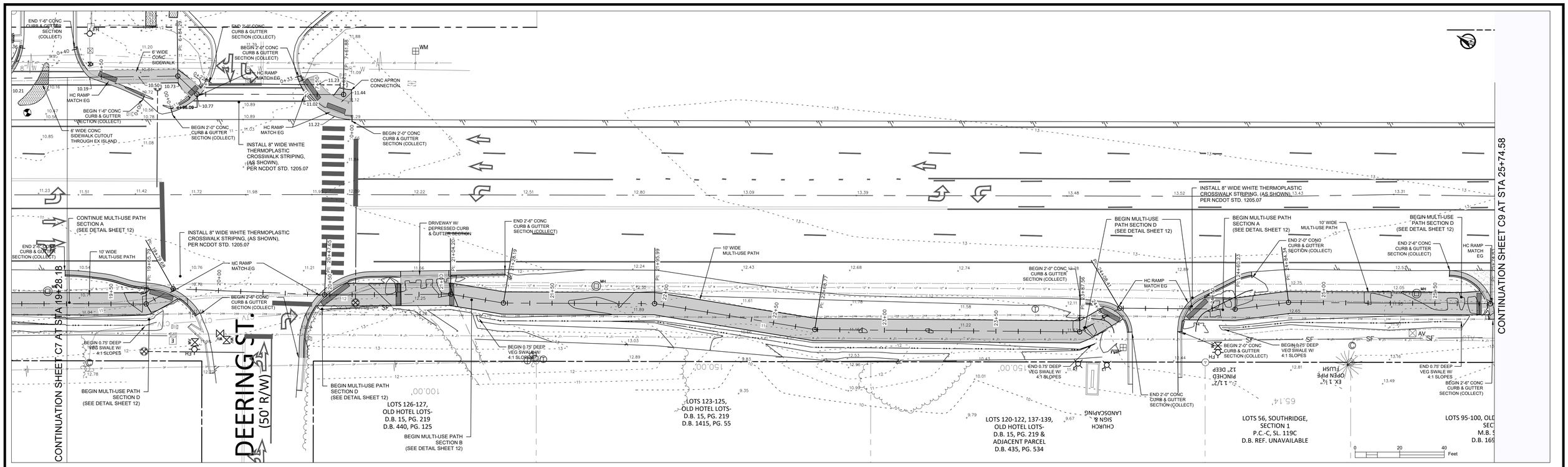
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULYI-USE PATH PLAN

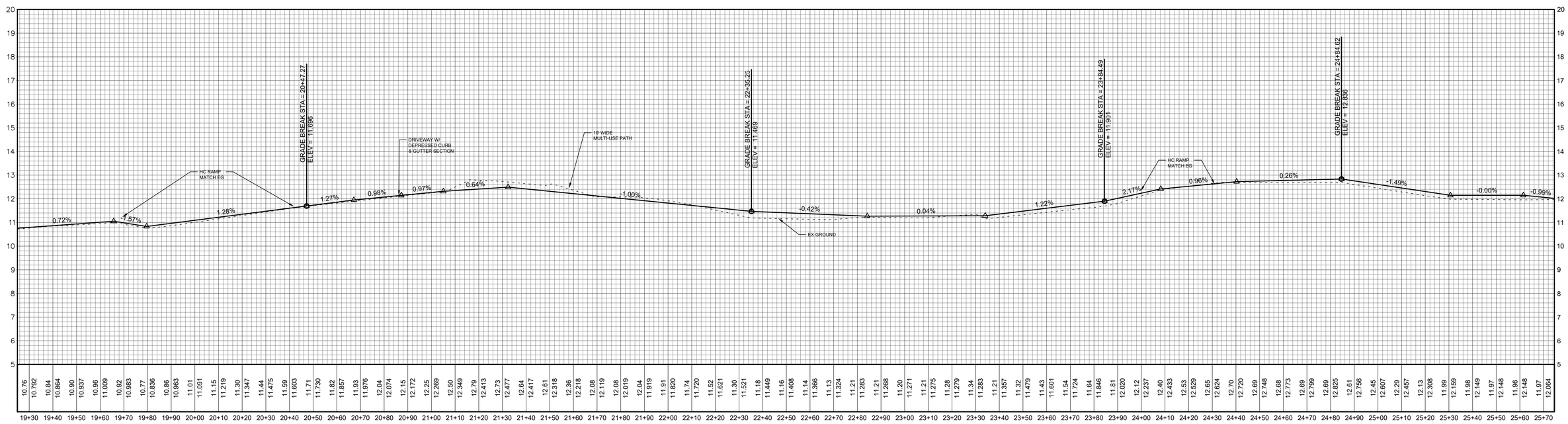
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING TITLE:
PLAN/PROFILE SHEET
STA 13+00 - 19+28.18

DRAWING NO.: C-7

SHEET NO.: SHEET 7 OF 17





NO.	DATE	REVISION	APPR'D	DATE
1	12-2-2019	REV'D SIDEWALK WIDTH TO 6'	DMR	

APPROVALS

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

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NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

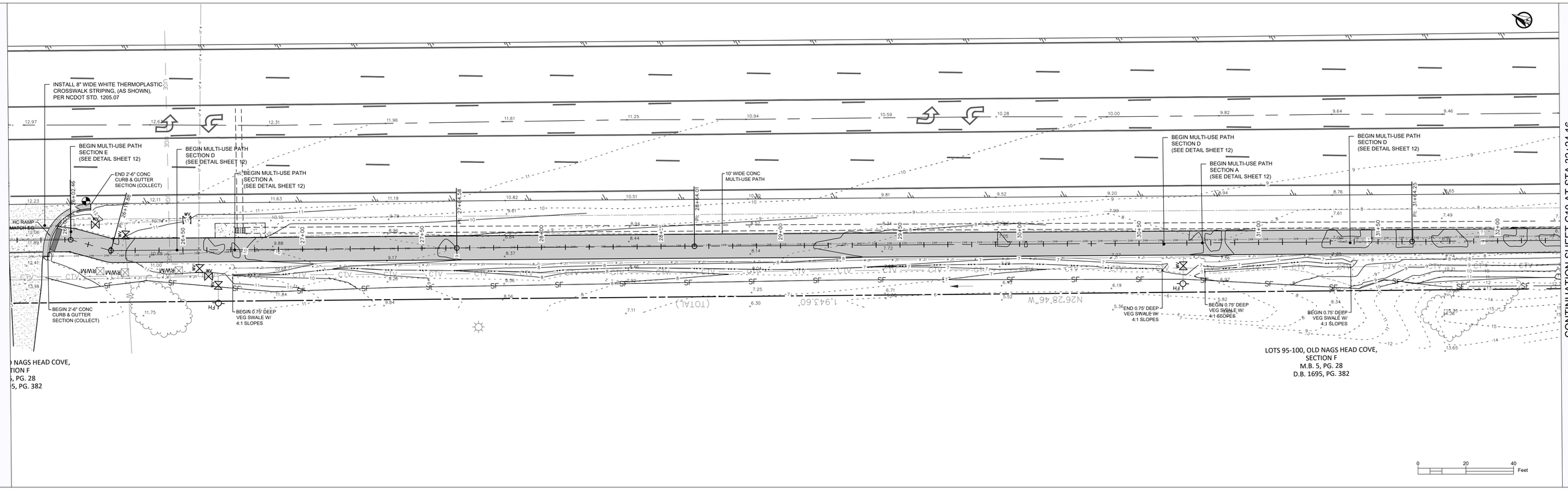
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING TITLE:
PLAN/PROFILE SHEET
STA 19+30 - 25+74.58

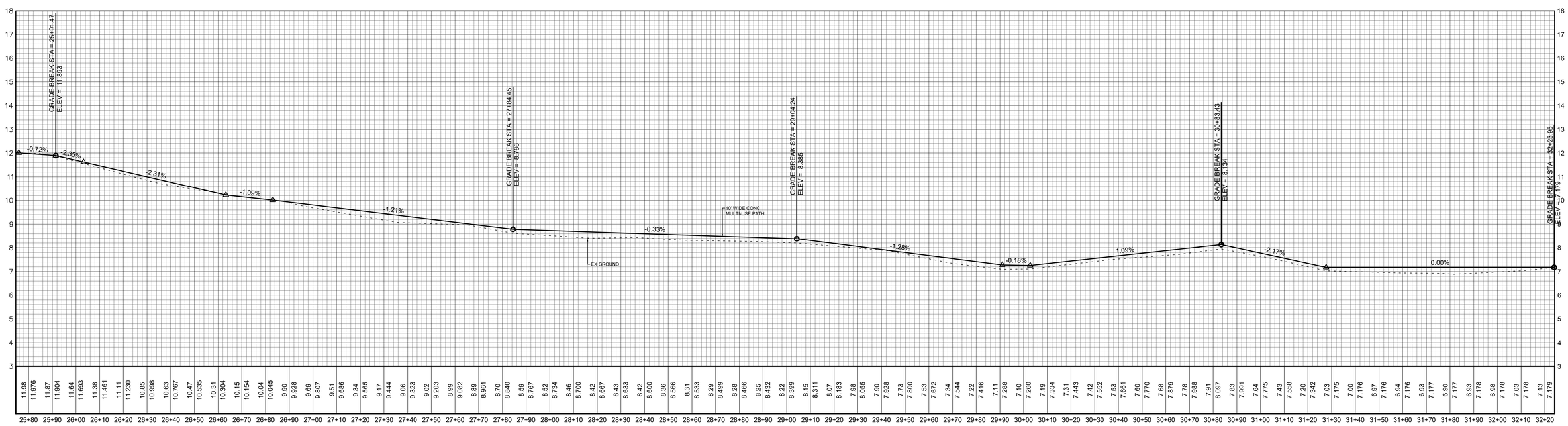
DRAWING NO.: C-8

SHEET NO.: SHEET 8 OF 17

CONTINUATION SHEET C8 AT STA 25+74.58



CONTINUATION SHEET C10 AT STA 32+24.16



NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

THE TOWN OF NAGS HEAD N.C. 1961

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
252.441.6221 • www.nagsheadnc.gov

NOTES:
ISSUED FOR BID

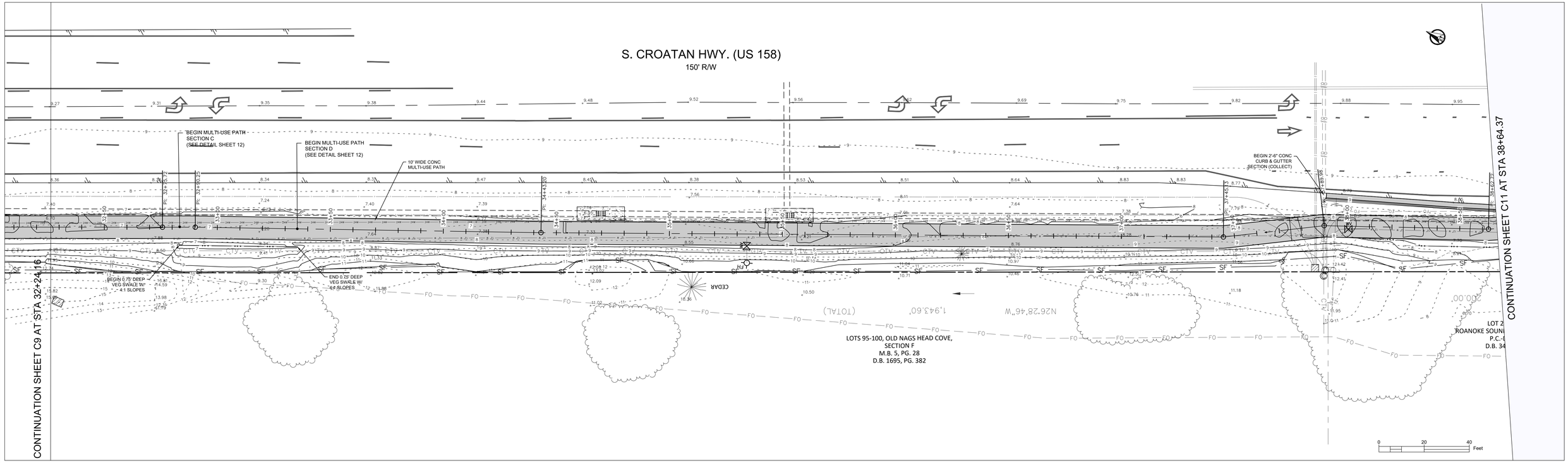
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

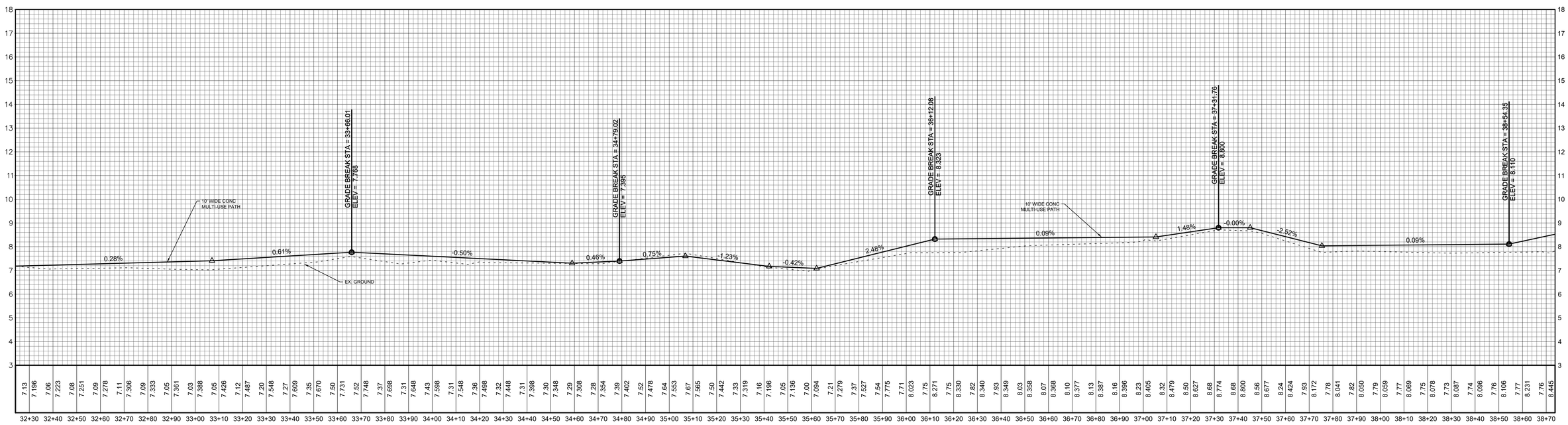
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING TITLE:
PLAN/PROFILE SHEET STA 25+75 - 32+24.16

DRAWING NO.: C-9

SHEET NO.: SHEET 9 OF 17





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NOTES:
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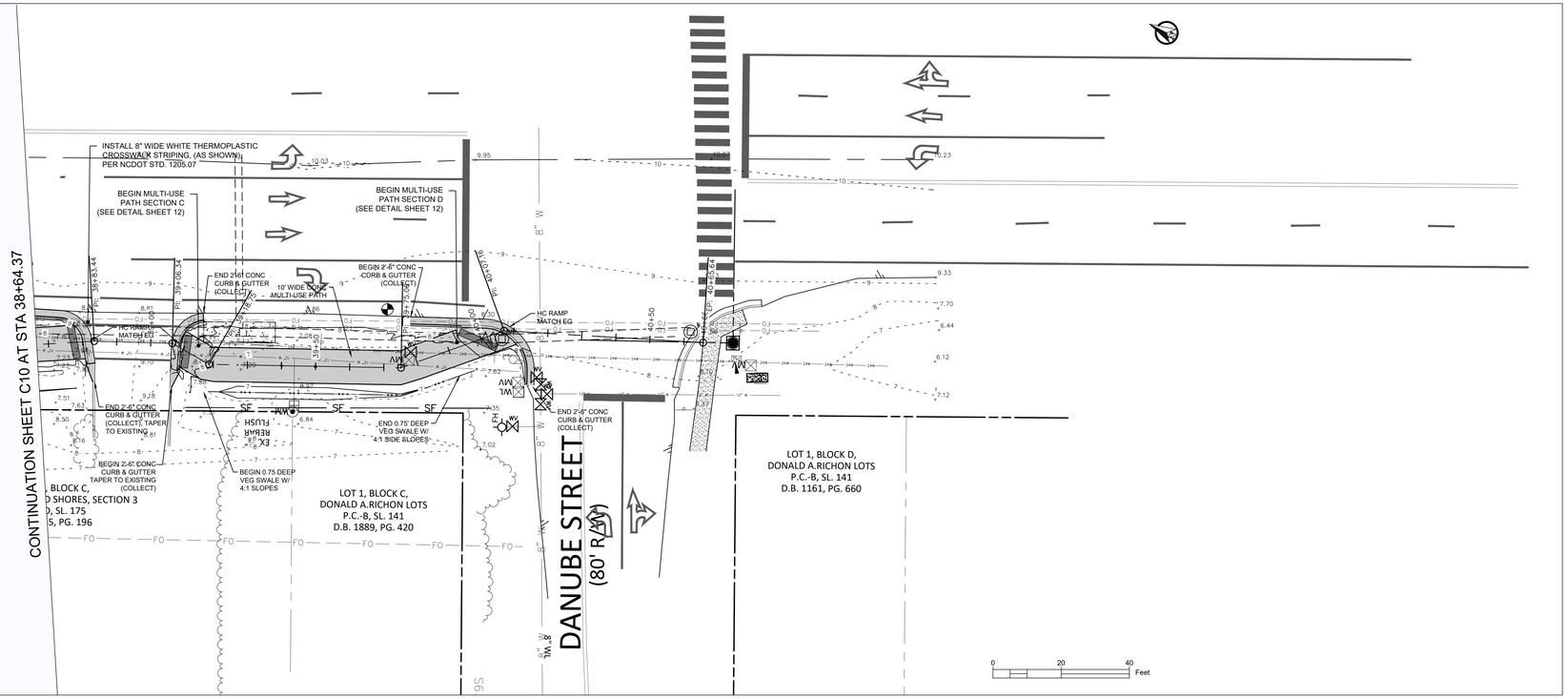
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

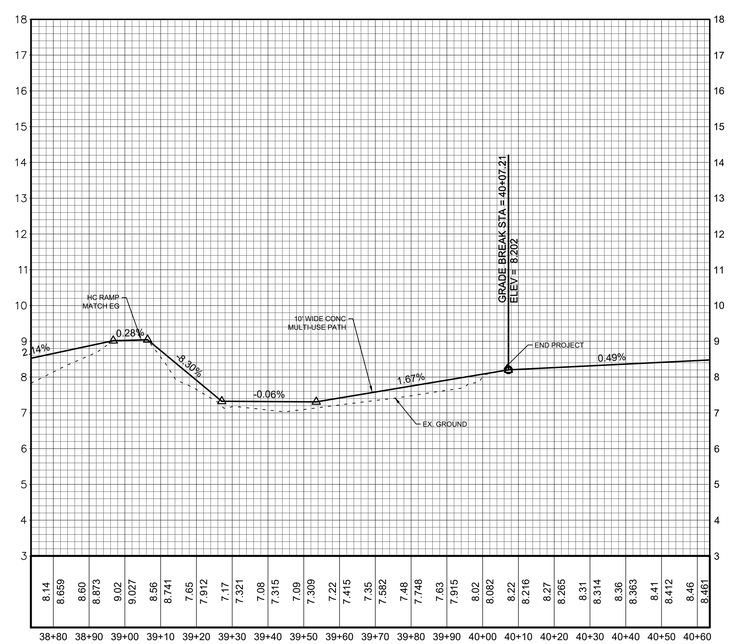
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING TITLE:
PLAN/PROFILE SHEET
STA 32+22 - 38+64.37

DRAWING NO.: C-10

SHEET NO.: SHEET 10 OF 17





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NOTES:
ISSUED FOR BID

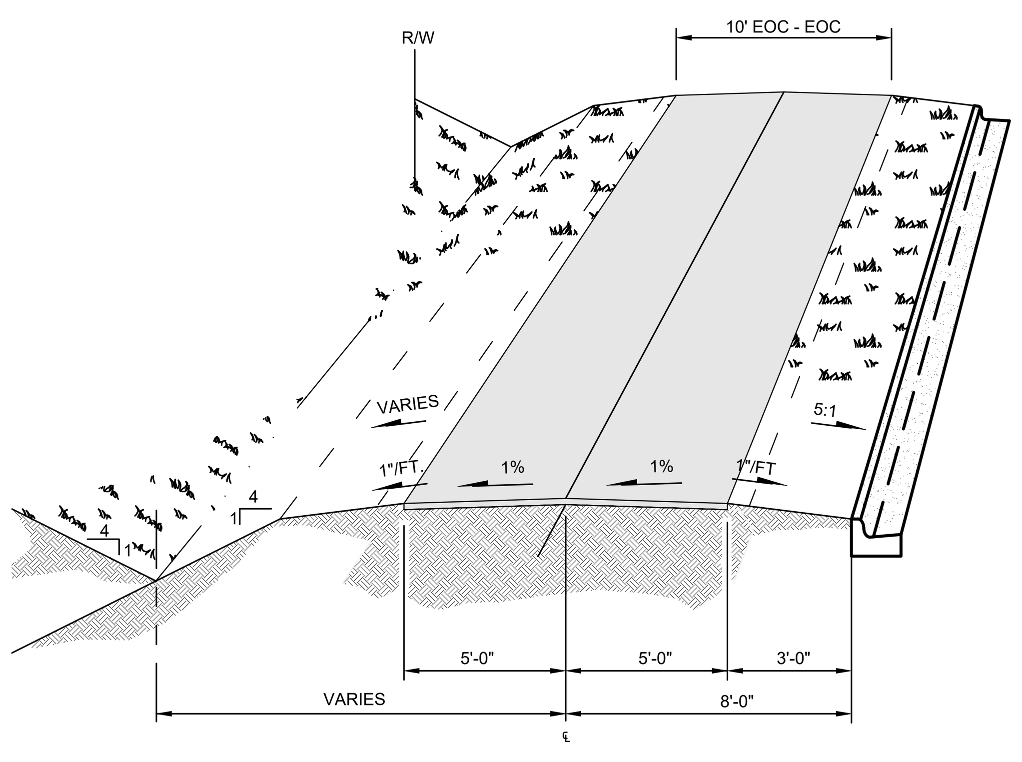
CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

DRAWING TITLE:
PLAN/PROFILE SHEET STA 38+64 - 40+14.57

DRAWING NO.: C-11

SHEET NO.: SHEET 11 OF 17



MULTI-USE PATH DETAIL
NOT TO SCALE (LOCATIONS AS DENOTED ON PLAN)

GENERAL NOTES
1. ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC. ADDITIONAL MEASURES SHALL BE INCLUDED AS PART OF A SUPPLEMENTAL EROSION CONTROL PLAN PREPARED BY THE CONTRACTOR.
2. THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK.
3. CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:
   - PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER.
   - SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER.
   - BLADE, LEVEL AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PRODUCE A SMOOTH "RIDE".
   - PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS AND SCRAP MATERIALS.
   - REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.
4. EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.
6. CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.
7. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE FENCE REMOVAL OR REINSTALLATION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO REMOVAL. CONTRACTOR SHALL REINSTALL ALL SHEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).
8. CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).
9. CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).
10. WHERE CONTRACTOR CEASES WORK OPERATIONS FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.
    A. CONTRACTOR SHALL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
    B. THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.
11. CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.
12. CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS. WHERE UTILITIES ARE BEING CONSTRUCTED IN EASEMENTS OUT OF TRAFFIC AREAS CONTRACTOR MAY STORE MATERIALS AHEAD OF CONSTRUCTION FOR A DISTANCE NOT GREATER THAN 1800 FEET UNLESS APPROVED OTHERWISE BY THE ENGINEER.
13. AT THE PROPERTY OWNER'S REQUEST, THE CONTRACTOR SHALL DIG UP EXISTING SHRUBS AND BUSHES WITHIN UTILITY EASEMENT TO BE DISTURBED BY CONSTRUCTION AND SET OUTSIDE THE UTILITY EASEMENT AREA IN A LOCATION DETERMINED BY THE PROPERTY OWNER (NO SEPARATE PAYMENT). PROPERTY OWNER WILL BE RESPONSIBLE FOR REPLANTING SHRUBS AND BUSHES SO REMOVED, AND SHALL BE RESPONSIBLE FOR REESTABLISHING GROWTH. IF NO REQUEST IS MADE BY THE PROPERTY OWNER, DISTURBED SHRUBS AND BUSHES SHALL BE REMOVED AND DISPOSED OF OFF-SITE UNLESS OTHERWISE INDICATED.
14. CLEARING AND GRUBBING SHALL BE RESTRICTED TO PERMANENT EASEMENTS ONLY. CONTRACTOR SHALL LIMIT TREE/BUSH CLEARING IN THE TEMPORARY EASEMENTS, BETWEEN HOUSES AND ALONG PROPERTY LINES TO ONLY ABSOLUTELY NECESSARY FOR CONSTRUCTION.

UTILITY GENERAL NOTES
1. PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (i.e. TELEPHONE, GAS, CABLE, ETC.).
2. THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).
3. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE N.C.D.O.T. STANDARDS.
4. UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.
5. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).
6. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE NEC AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING
7. WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-IN'S TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH TOWN OF NAGS HEAD STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

PAVEMENT REPAIR NOTES
1. CONTRACTOR SHALL PATCH PAVEMENT TO THE SAME PAVEMENT CROSS SECTION AS EXISTED PRIOR TO REMOVING PAVEMENT. THE STREET CROWN SHALL BE RESTORED.
2. WHERE PATCH OF CURBING OCCURS CONTRACTOR SHALL MATCH EXISTING CURB GRADES WITHIN 0.02 FEET. PATCHES THAT ARE ABOVE THE CURB GRADE LINE WILL NOT BE ACCEPTABLE AND SHALL BE REMOVED AND REPATCHED AT NO EXPENSE TO THE OWNER. CURB PATCH SHALL BE THE SAME SHAPE/TEMPLATE AS THE EXISTING CURB.
3. CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE MUTCD OR N.C. SUPPLEMENT. WORK CAN NOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE FROM SURFACE DEFLECTIONS.
4. CONTRACTOR SHALL SAWCUT EXIST. PAVEMENT STRAIGHT AND TRUE PRIOR TO REMOVING ASPHALT FOR UTILIITY INSTALLATION. THE ENGINEER MAY APPROVE THE USE OF A MILLING MACHINE FOR REMOVAL OF THE EXISTING PAVEMENT WITHIN TRENCH LIMITS. WHERE MILLING IS APPROVED THE CONTRACTOR SHALL PLACE AND COMPACT MILLINGS IN MILLED AREA TO PROVIDE AN INTERIM TRAFFIC SURFACE. MILLING WHERE APPROVED BY ENGINEER IS AN ALTERNATE TO CUTTING ASPHALT AND DISPOSING OFF-SITE.
5. AFTER UTILITY IS INSTALLED AND TESTED AND THE EXCESS BASE MATERIAL REMOVED (APPROX. 2") CONTRACTOR SHALL AGAIN SAWCUT EXISTING PAVEMENT STRAIGHT AND TRUE IMMEDIATELY PRIOR TO PAVING AS NOTED ABOVE.
6. MILLING OPERATIONS SHALL BE LIMITED TO 1800 FEET PER MAIN LINE CREW NOT TO EXCEED 3000 FEET IN TOTAL OF DISTURBED ROADWAY FOR THE ENTIRE PROJECT AT ONE TIME WHERE. CONTRACTOR SHALL PATCH PAVE DISTURBED AREA OF ROADWAY PRIOR TO DISTURBING ADDITIONAL ROADWAY.
7. AT NO TIME SHALL THE TRENCH BE LEFT UNATTENDED WITH A VERTICAL DROP GREATER THAN 1 INCH FROM ASPHALT SURFACE TO TOP OF BACKFILLED TRENCH.
8. IF PAVEMENT SETTLEMENT OCCURS WITHIN 1 YEAR, THE CONTRACTOR SHALL REPATCH AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. TOWN OF NAGS HEAD WILL REQUIRE FULL DEPTH ASPHALT PATCH TO MATCH EXISTING ASPHALT THICKNESS ON STATE MAINTAINED ROADS. PATCH PAVING SHOULD OCCUR SAME DAY AS REMOVAL.
10. TEST FOR DENSITY OF COMPACTION MAY BE MADE AT THE OPTION OF THE ENGINEER AND DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE ENGINEER MAY HAVE COMPACTION TEST PERFORMED AFTER THE BACKFILL IS COMPLETE. CONTRACTOR SHALL BE REQUIRED TO EXCAVATE TO VARIOUS ELEVATIONS FOR DENSITY TESTING EXCAVATION, BACKFILL AND RECOMPACTION SHALL BE PERFORMED AT NO ADDITIONAL COSTS TO THE OWNER.

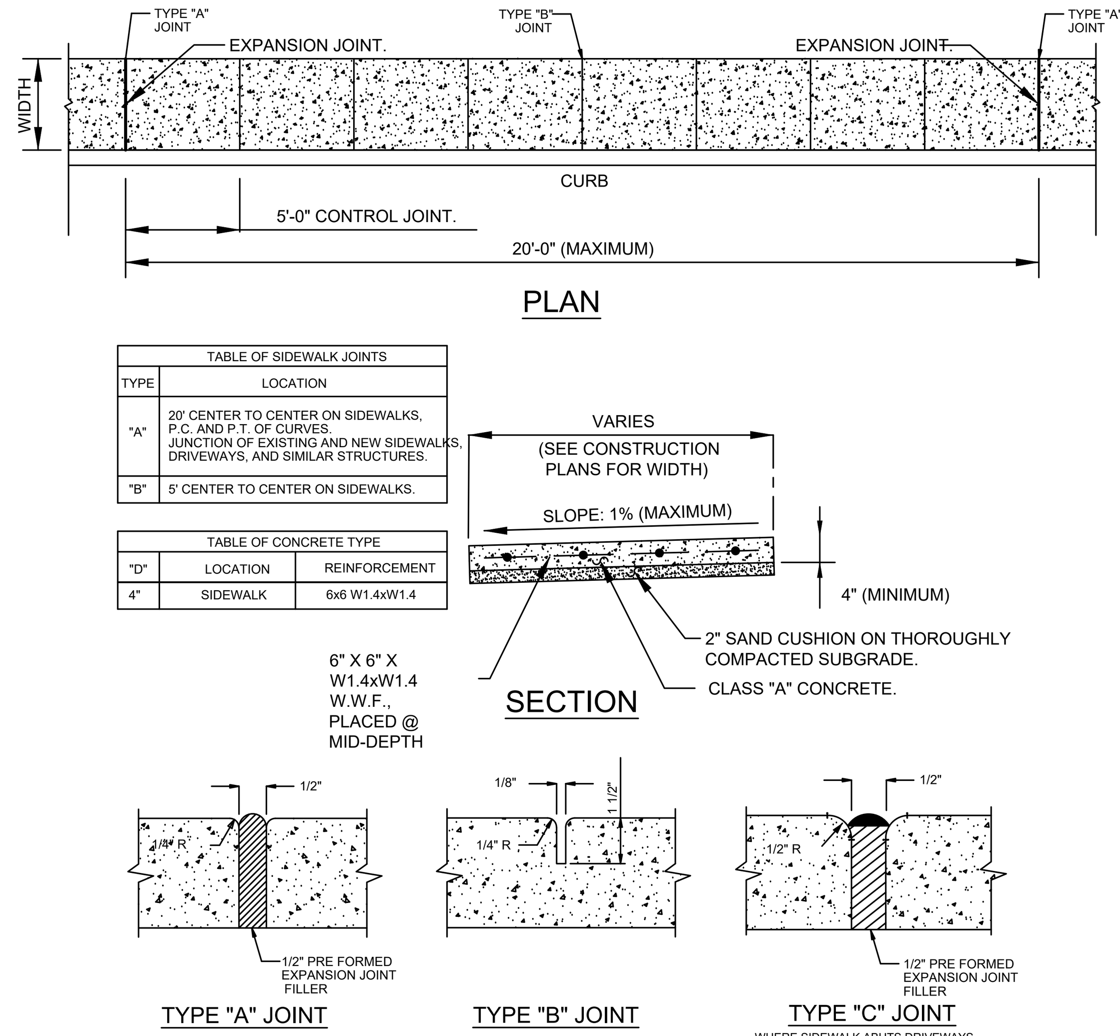


TABLE OF SIDEWALK JOINTS

TYPE	LOCATION
"A"	20' CENTER TO CENTER ON SIDEWALKS, P.C. AND P.T. OF CURVES, JUNCTION OF EXISTING AND NEW SIDEWALKS, DRIVEWAYS, AND SIMILAR STRUCTURES.
"B"	5' CENTER TO CENTER ON SIDEWALKS.

TABLE OF CONCRETE TYPE

"D"	LOCATION	REINFORCEMENT
4"	SIDEWALK	6x6 W1.4xW1.4

CONCRETE PATHWAY INSTALLATION DETAILS
NOT TO SCALE (SEE PLAN FOR LOCATIONS)

NOTES :
1. PATH SHALL HAVE A 4" MINIMUM THICKNESS
2. ALL PATHWAYS WILL BE CONSTRUCTED A MINIMUM OF 5 FEET WIDE.
3. ALL CONCRETE USED FOR PATHWAYS SHALL BE A MINIMUM OF 3,500 PSI.
4. PATHWAYS SHALL FORM A CONTINUOUS PATH ALONG ALIGNMENT.

SCOPE OF DEMOLITION WORK

THE ITEM(S) TO BE REMOVED ARE SHOWN ON THE PROJECT DRAWINGS. UNLESS OTHERWISE SPECIFIED, DEMOLITION SHALL BE DONE ALONG WITH ANY SPECIFIED CLEARING, GRUBBING, AND REMOVAL OF OBSTRUCTIONS, AT A SATISFACTORY DISTANCE IN ADVANCE OF EARTHWORK AND/OR OTHER SCHEDULED CONSTRUCTION. THE AREA ABOVE THE NATURAL GROUND SURFACE SHALL BE CLEARED OF ALL VEGETATION SUCH AS TREES, LOGS, UPTURNED STUMPS, ROOTS OF DOWNED TREES, BRUSH, GRASS, WEEDS, AND ALL OTHER OBJECTIONABLE MATERIAL INCLUDING CONCRETE OR MASONRY, WITHIN THE FOLLOWING LIMITS:

A. AREA LIMITS FOR DEMOLITION, CLEARING AND GRUBBING
FOR STREETS, ROADS, PARKING AND LANDSCAPED AREAS, STRUCTURES AND ALL OTHER TYPES OF CONSTRUCTION, THE DEMOLITION, CLEARING AND GRUBBING SHALL EXTEND TO AT LEAST 5 FT. OUTSIDE OF THE DESIGNATED EXCAVATION AREA(S), UNLESS OTHERWISE SPECIFIED IN PROJECT DOCUMENTS.

B. WASTE TEMPORARY STORAGE AND DISPOSAL
THE CONTRACTOR MAY COLLECT DEMOLITION, CLEARING AND GRUBBING WASTES AT ONE PRE-APPROVED LOCATION ON THE SITE FOR COST EFFECTIVE LOADING AND HAULING. ALL MATERIALS REMOVED SHALL BE DISPOSED AT LOCATIONS AWAY FROM TOWN PROPERTY. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR DISPOSING OF MATERIALS AND SHALL PAY ALL COSTS INVOLVED.

C. BURIED OBSTRUCTIONS
ALL EXISTING FOUNDATIONS, SUMPS, BURIED TANKS, PIPING AND ALL OTHER OBJECTIONABLE MATERIAL, INCLUDING MASONRY AND CONCRETE RUBBLE, SHALL BE REMOVED FROM WITHIN THE LIMITS OF NEW STRUCTURE(S) AND/OR 3 FT. BELOW THE EXISTING GROUND SURFACE OR 6 FT. BELOW FINISHED GRADE, WHICHEVER IS DEEPER, OF SURROUNDING OPEN AREAS. THE REMOVAL OF EXISTING UTILITIES REQUIRED TO PERMIT ORDERLY PROGRESS OF WORK SHALL BE ACCOMPLISHED BY THE RESPECTIVE UTILITY'S SUBCONTRACTOR(S), UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS.

D. SPECIAL REQUIREMENTS FOR CONCRETE FACILITY REPLACEMENTS
CONCRETE FACILITIES SHALL BE REMOVED TO NEATLY SAWED EDGES WITH SAW CUTS MADE TO A MINIMUM DEPTH OF 3.0 IN. CONCRETE SIDEWALK OR DRIVEWAY APRONS TO BE REMOVED SHALL BE NEATLY SAWED IN STRAIGHT LINES WHETHER PARALLEL TO THE CURB OR AT RIGHT ANGLES TO THE ALIGNMENT OF THE SIDEWALK AS REQUIRED. NO SECTION OF SIDEWALK TO BE REPLACED SHALL BE SMALLER THAN 30 IN. IN EITHER LENGTH OR WIDTH. IF THE SAW CUT IN SIDEWALK OR DRIVEWAY APRON FALLS WITHIN 30 IN. OF A CONSTRUCTION JOINT, EXPANSION JOINT, OR EDGE, THE CONCRETE SHALL BE REMOVED TO THAT JOINT OR EDGE. ALSO, WHERE THE SAW CUT FALLS WITHIN 12 IN. OF A SCORE MARK, THE SAW CUT SHALL BE MADE IN AND ALONG THE SCORE MARK. CURB AND GUTTER SHALL BE SAWED TO A DEPTH OF 3.0 IN. ON A NEAT LINE AT RIGHT ANGLES TO THE CURB FACE. NO SECTION OF CURB AND GUTTER TO BE REPLACED SHALL BE SMALLER THAN 5 FT. IN LENGTH. IF THE SAW CUT IN THE CURB AND GUTTER FALLS WITHIN 5 FT. OF A CONSTRUCTION JOINT OR EXPANSION JOINT, THE CONCRETE SHALL BE REMOVED TO THAT JOINT.

E. SEPTIC TANKS, CHEMICAL SUMPS AND TANKS, AND SEWERS
THE REMOVAL OF THESE AND RELATED ITEMS ALSO GENERALLY INVOLVE THE REMOVAL OF HAZARDOUS MATERIALS. THE TOWN WILL PREPARE AND OBTAIN APPROVAL OF CLOSURE PLANS FOR EACH LOCATION, WILL SUPPLY SPECIAL CONTAINERS INTO WHICH SOME HAZARDOUS MATERIALS SHALL BE PLACED AND WILL PREPARE MANIFEST PAPERS FOR SHIPMENT. SOME OF THE DEBRIS CONSIDERED CLEAN, SHALL BE HAULED TO REGULAR DUMP FOR DISPOSAL.

G. SEALING AND ABANDONING OF WELLS
NEITHER THE WORK OF SEALING AND ABANDONING WELLS NOR ANY OTHER WORK WITH POTABLE OR GROUNDWATER OBSERVATION IS A PART OF THIS SECTION. SHOULD ANY UNSPECIFIED WELL BE FOUND IN THE PROJECT WORK AREA, NOTIFY THE CONSTRUCTION ENGINEER.

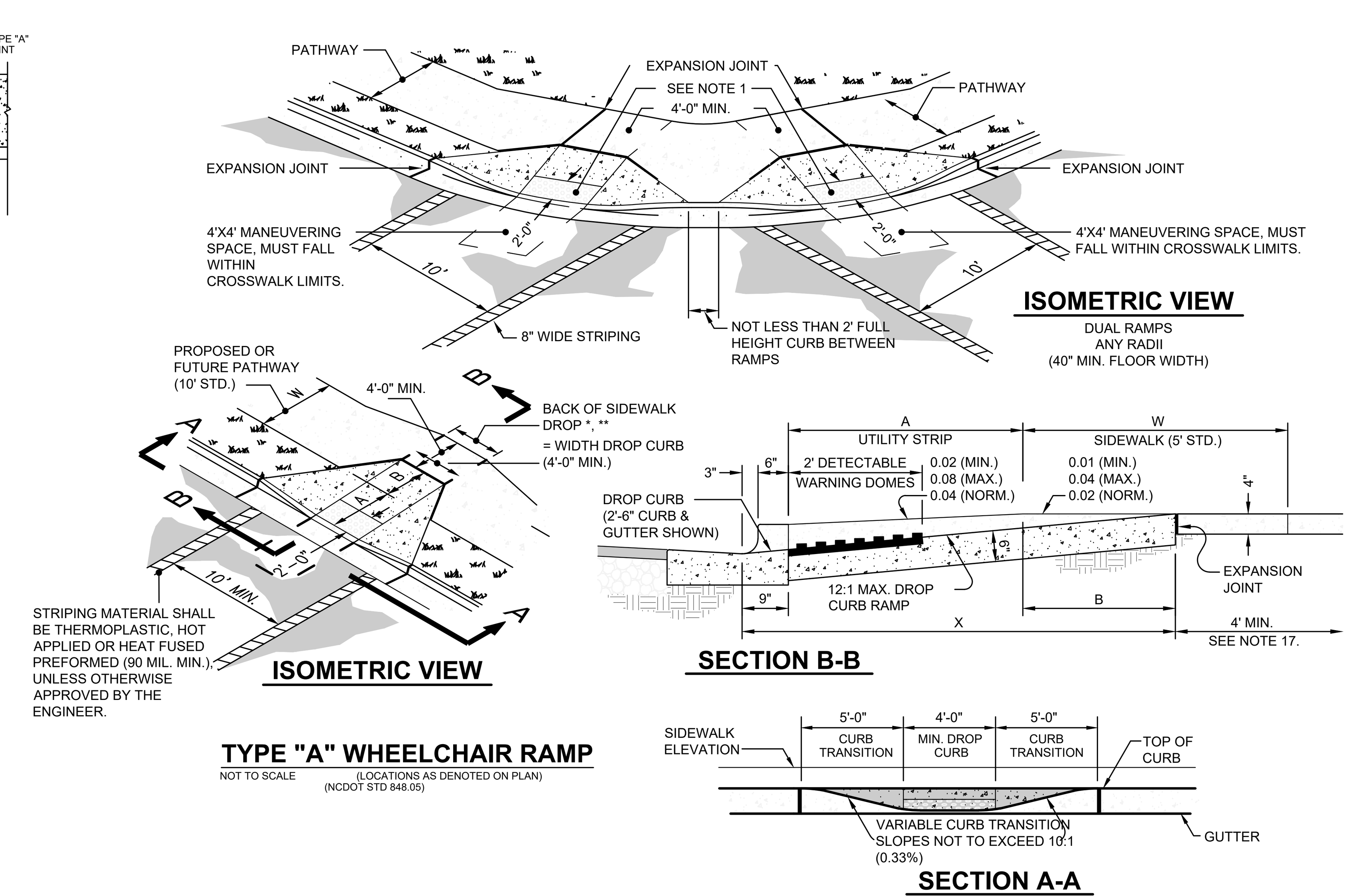
H. APPLYING WATER, WETTING AGENTS AND DUST PALLIATIVES
1. EQUIPMENT
ALL EQUIPMENT USED FOR THE APPLICATION OF WATER SHALL BE EQUIPPED WITH A POSITIVE MEANS OF SHUTOFF THAT IS APPROVED BY THE LOCAL WATER AUTHORITY.

2. AVAILABILITY OF EQUIPMENT AND WATER
DURING ALL DEMOLITION OPERATIONS THAT CREATE, OR IS LIKELY TO CREATE ANY DUST, ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 1,000 GAL. SHALL BE AVAILABLE FOR APPLYING WATER. NEITHER TOWN POTABLE, NOR FIRE PROTECTION WATER SHALL BE USED.

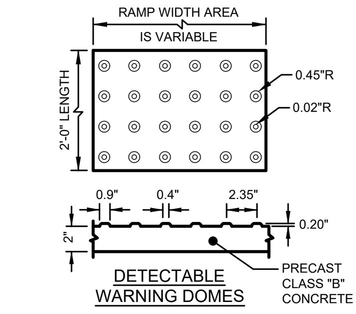
3. WETTING AGENTS
IF SUCH WETTING AGENT IS USED, FURNISHING AND APPLYING THE WETTING AGENT SHALL BE AT THE CONTRACTOR'S EXPENSE. THE PROPORTION OF WETTING AGENT TO WATER SHALL BE AS RECOMMENDED BY THE MANUFACTURER, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER.
4. DISTRIBUTION (SPRAYING)
THE RESULTING MIXTURE SHALL BE APPLIED WITH PRESSURE TYPE WATER DISTRIBUTOR TRUCK EQUIPPED WITH A SPRAY SYSTEM OR PRESSURE TYPE ASPHALT DISTRIBUTORS AT AN APPROXIMATE RATE OF FROM 0.2 GAL. TO 0.8 GAL./SY.

I. WASTE, SPOIL AND SURPLUS MATERIALS
UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS OR SUPPLEMENTAL SPECIFICATIONS, ALL WASTE, SPOIL AND SURPLUS MATERIAL, SHALL BE DISPOSED OF AWAY FROM LMMS PROPERTY AT THE CONTRACTOR'S EXPENSE.

J. SAFETY DEMOLITION HOLES
COMPACTED BACKFILL OF HOLES SHALL BE IMMEDIATELY SURROUNDED BY SAFETY BARRICADES. SHOULD HOLES IN STREETS, SIDEWALKS OR PARKING AREAS NEED TO BE QUICKLY MADE READY FOR TEMPORARY TRAFFIC, REFER TO TRENCHING AND BACKFILLING.



TYPE "A" WHEELCHAIR RAMP
NOT TO SCALE (LOCATIONS AS DENOTED ON PLAN) (NCDOT STD 848.05)

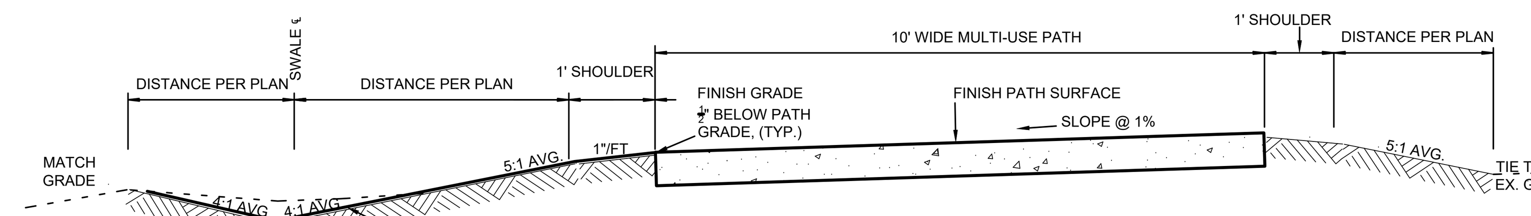


DETECTABLE WARNING DOMES

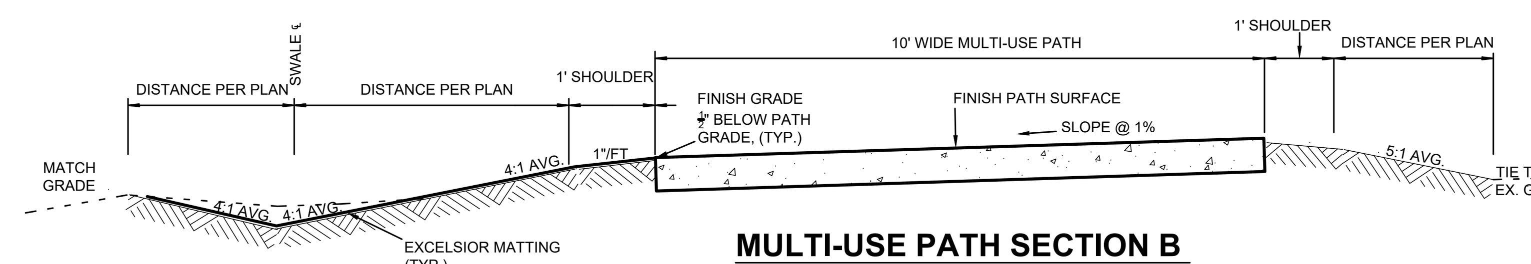
ALTERNATE MATERIAL MAY BE SUBSTITUTED, PROVIDED THE PRODUCT IS ON THE TOWN'S APPROVED MANUFACTURER LIST AND THE MANUFACTURER'S PRODUCT AND INSTALLATION SPECIFICATIONS ARE FOLLOWED.

NOTES:
1. DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES MANUFACTURED BY "COTE-L INDUSTRIES, INC.". CALLED "SAFTI-TRAX", WITH POLYURETHANE COATING "DURABAK", OR APPROVED EQUAL. APPLIED ON SMOOTH (NON-GROOVED) CLEAN CONCRETE RAMP, AND SHALL CONFORM TO THE DETAILS IN THE PLANS AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
2. ALL DETECTABLE WARNING AREAS SHALL START AT BACK OF CURB, BE 24 INCHES IN DEPTH AND COVER THE COMPLETE WIDTH OF THE RAMP AREA 48 INCHES MIN..
3. 70% VISUAL CONTRAST IS REQUIRED. THE COLOR SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING MATERIAL, AS SPECIFIED ON THE PLANS. COLOR TO BE DETERMINED BY THE TOWN STAFF, SAFETY YELLOW IS THE DEFAULT COLOR.
4. DETECTABLE WARNING SURFACE:
   APPLIED A COATING OF "DURABAK" SLIP-RESISTANT POLYURETHANE COATING TO THE SMOOTH, CLEAN CONCRETE SURFACE. ON TOP OF THE POLYURETHANE COATING APPLY TRUNCATED DOMES FROM A "SAFTY-TRAX" CONTACT SHEET. ON TOP OF THE TRUNCATED DOMES AND INITIAL POLYURETHANE COATING PLACE THREE ADDITIONAL COATS OF "DURABAK" POLYURETHANE COATING. COLOR TO BE DETERMINED BY TOWN STAFF OR AS SPECIFIED ON THE PLANS. SAFETY YELLOW IS A DEFAULT COLOR.
5. ALL RAMPS AND DETECTABLE WARNING SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL AND DIRECTED TOWARD RAMP.

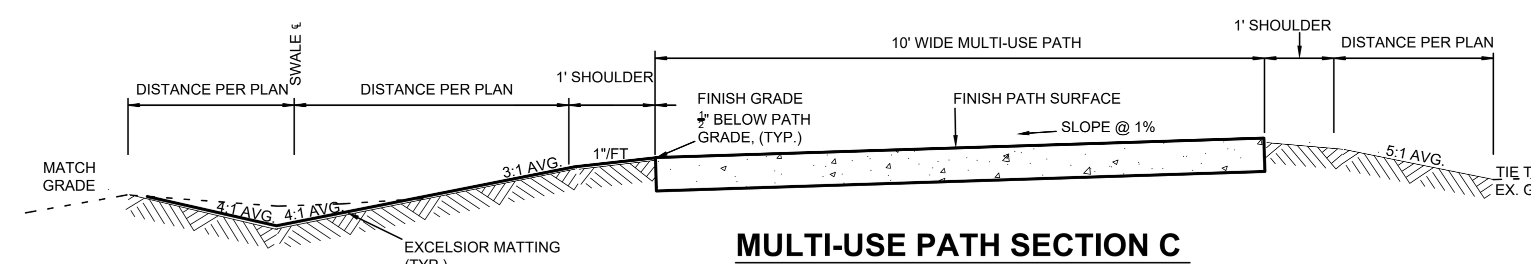
NOTES:
1. CONSTRUCT THE WALKING SURFACE OF THE DETECTABLE DOMES WITH SLIP RESISTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. PROVIDE CURB RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE CURB RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED PLACE NOT LESS THAN 2 FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS NEAR PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE.
4. DO NOT EXCEED 0.08 FT./FT. (12:1) SLOPE ON THE CURB RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
5. CONSTRUCT CURB RAMPS A MINIMUM OF 48" WIDE (4'-0"); GREATER FOR DUAL RAMPS.
6. USE CLASS “B” CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
7. PLACE A 1/2” EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB.
8. PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION THEN WOULD BE ESTABLISHED BY BISECTING THE INTERSECTION RADII, WITH AN ALLOWANCE OF A 4'X4' MANEUVERING SPACE (2003 ICC/ANSI A117 COMMENTARY. FIG. C406.6 & 406.10) IN THE VEHICULAR TRAVEL WAY WHEN ONE RAMP IS INSTALLED.
9. COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24” OF THE FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
10. CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM WIDTH OF 6 FEET. A CROSSWALK WIDTH OF 10 FEET OR GREATER IS REQUIRED FOR ALL THOROUGHFARES. CROSSWALKS SHALL BE INSTALLED IN ACCORDANCE WITH NCDOT STD. 1205.07.
11. USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
12. PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD. MATERIAL SHALL BE THERMOPLASTIC, HOT APPLIED OR HEAT FUSED PREFORMED (90 MIL. MIN.), UNLESS OTHERWISE APPROVED BY THE ENGINEER.
13. OTHER DETECTABLE WARNING MATERIALS MAY BE CONSIDERED FROM THAT SHOWN, BUT REQUIRE ENGINEER'S WRITTEN APPROVAL PRIOR TO INSTALLATION.
14. FOR ALL ROADS WITH RADIUS 25' OR LESS. ONLY ONE CURB RAMP IS REQUIRED. CURB RAMPS TO BE PLACED AS PER TRAFFIC DESIGN STANDARDS TO ENSURE PEDESTRIANS ENTER & EXIT WITHOUT ENTERING TRAVEL LANES.
15. TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN WALK.
16. A 4'X4' MANEUVERING SPACE IS REQUIRED AT THE BOTTOM OF THE CURB RAMP AND MUST BE WITHIN THE CROSSWALK.
17. DROP CURB WIDTH (4'-0" MIN.) X 4' LONG LANDING REQUIRED AT TOP OF CURB RAMP
18. NORTH CAROLINA GENERAL STATUTE 136-44.14 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE CURB RAMPS FOR THE PHYSICALLY DISABLED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.
    IN ADDITION, SECTION 228 OF THE 1973 FEDERAL AID HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR A FUTURE DATE.
    THE AMERICANS WITH DISABILITY ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES. COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH THE CURRENT ADA STANDARDS.
19. CONSTRUCT ALL RAMP SURFACES TO COMPLY WITH SECTIONS R301 AND R303.3.3 OF THE REVISED ADA GUIDELINES.
20. CONSTRUCT ALL RAMPS AND SIDEWALKS WITH A 2% CROSS SLOPE.



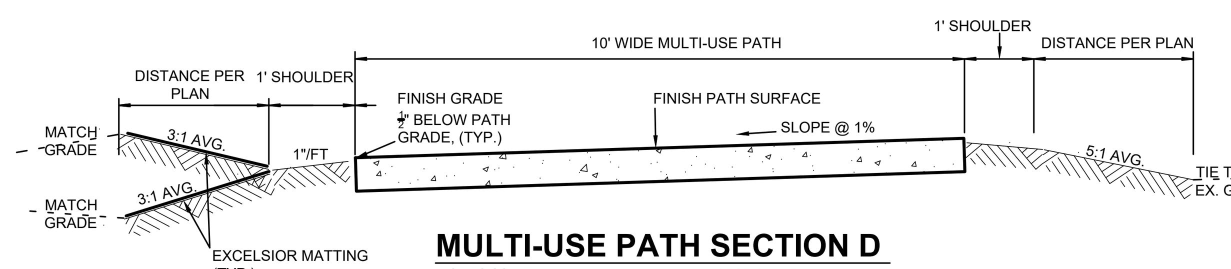
MULTI-USE PATH SECTION A
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)



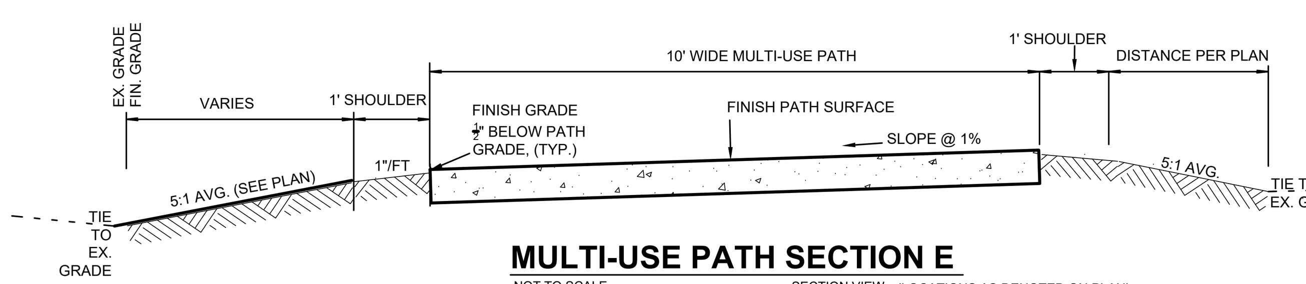
MULTI-USE PATH SECTION B
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)



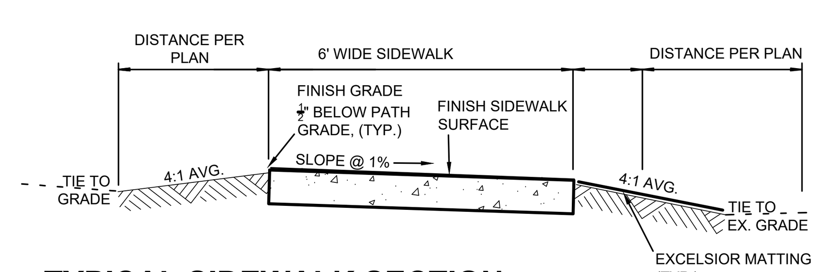
MULTI-USE PATH SECTION C
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)



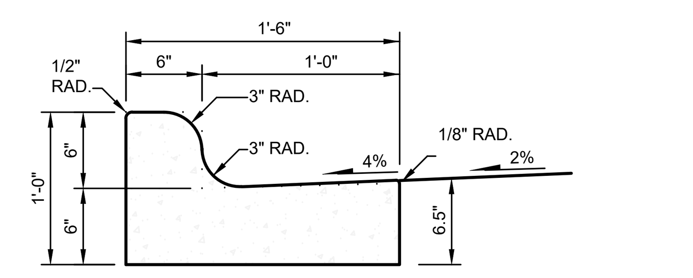
MULTI-USE PATH SECTION D
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)
PAVEMENT SLOPE DIRECTION MAY VARY WITH LOCATION



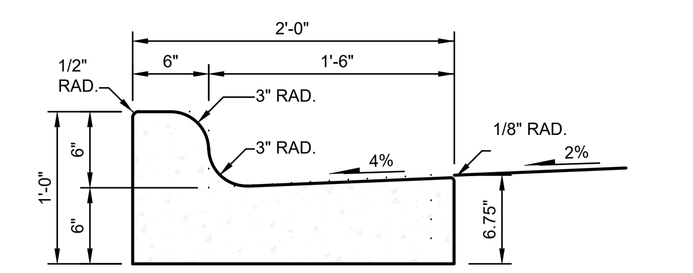
MULTI-USE PATH SECTION E
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)



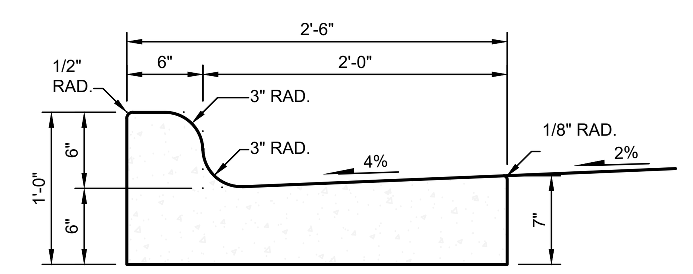
TYPICAL SIDEWALK SECTION
NOT TO SCALE SECTION VIEW (LOCATIONS AS DENOTED ON PLAN)



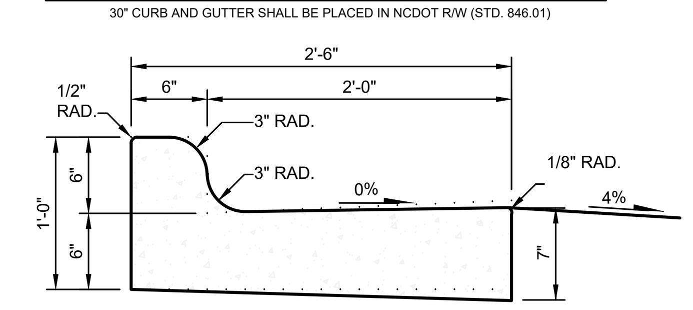
1'-6" CURB AND GUTTER (COLLECT)
18" CURB AND GUTTER FOR DRIVEWAY CURB REPLACEMENT



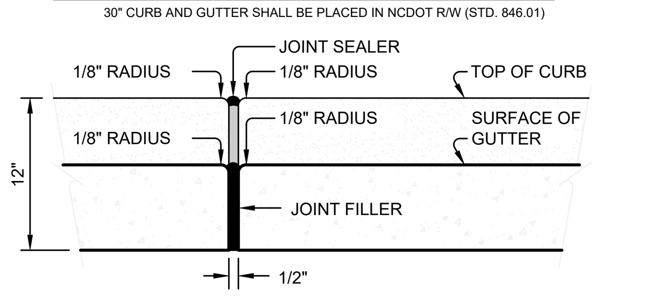
2'-0" CURB AND GUTTER (COLLECT)
24" CURB AND GUTTER FOR DRIVEWAY CURB REPLACEMENT



2'-6" CURB AND GUTTER (COLLECT)
30" CURB AND GUTTER SHALL BE PLACED IN NCDOT R/W (STD. 846.01)

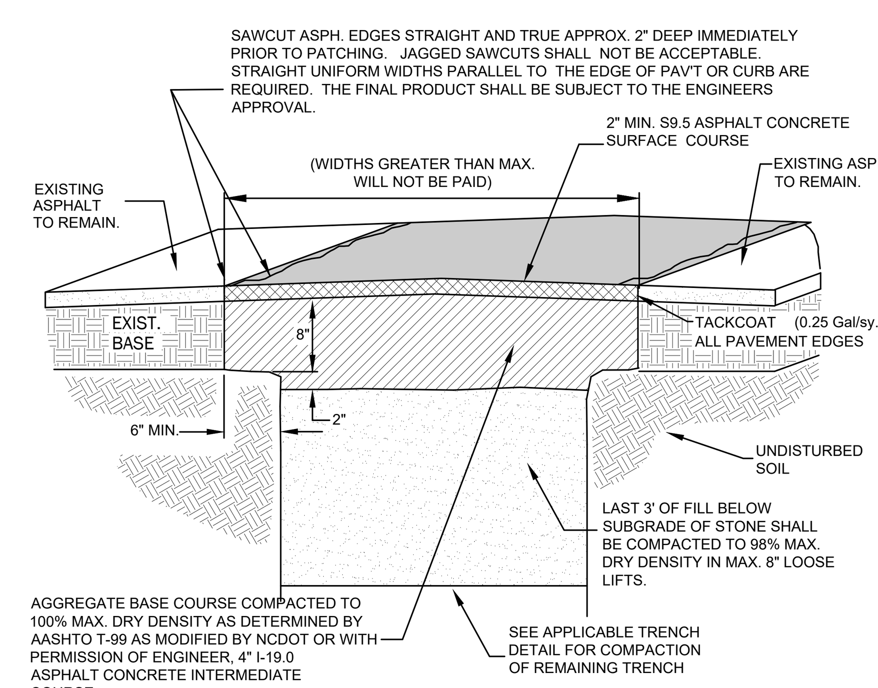


2'-6" CURB AND GUTTER (SPILL)
30" CURB AND GUTTER SHALL BE PLACED IN NCDOT R/W (STD. 846.01)



TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

NOTES:
1. CONTRACTION JOINTS SHALL BE PLACED AT 10' INTERVALS, EXCEPT THAT 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE OBTAINED.
3. ALL CONTRACTION JOINTS SHALL BE FILLED WITH JOINT FILLER.
4. EXPANSION JOINTS SHALL BE SPACED AT 90' INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS.
5. ALL CURB AND GUTTERS ARE TO BE POURED WITH CLASS "A" CONCRETE (3,000 PSI).
6. FLEXIBLE FORMS ARE TO BE USED WHEN RADIUS IS LESS THAN 200'.



PAVEMENT PATCH DETAIL
NOT TO SCALE (LOCATIONS AS DENOTED ON PLAN)

NO.	DATE	REVISION	APPR'D	DATE
1	11-8-19	DELETED GUARDRAIL/DETAIL & SECTION F	DMR	
2	12-2-19	REV'D SIDEWALK WIDTH TO 6'	DMR	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		
APPROVALS		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-8-2019

THE TOWN OF NAGS HEAD N.C. 1961

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
252.441.6221 • www.nagsheadnc.gov

NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: NONE
VERTICAL:

DRAWING TITLE:
MULTI-USE PATH CONSTRUCTION DETAILS

DRAWING NO.: C-12

CONSTRUCTION SEQUENCE

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
CONSTRUCTION ACCESS-CONSTRUCTION ENTRANCE, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS	FIRST LAND-DISTURBING ACTIVITY-STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL & TEMPORARY VEGETATION AS CONSTRUCTION TAKES PLACE.
SEDIMENT TRAPS & BARRIERS BASIN TRAPS, SEDIMENT FENCES, & OUTLET PROTECTION	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ACCESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING.
RUNOFF CONTROL-DIVERSIONS, PERIMETER DIKES, WATER BARS, AND OUTLET PROTECTION	INSTALL KEY PRACTICES AFTER PRINCIPAL SEDIMENTS TRAPS AND BEFORE LAND GRADING. INSTALL ADDITIONAL RUNOFF-CONTROL CONVEYANCE MEASURES DURING GRADING.
RUNOFF CONVEYANCE SYSTEM-STABILIZE STREAMBANKS, STORM DRAINS, CHANNELS, INLET & OUTLET PROTECTION, SLOPE DRAINS	WHERE NECESSARY, STABILZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPAL RUNOFF CONVEYANCE SYSTEM WITH RUNOFF-CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING & GRADING-SITE PREPARATION- CUTTING, FILLING & GRADING, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, DRAINS, SURFACE ROUGHENING	BEGIN MAJOR CLEARING AND GRADING AFTER PRINCIPAL & KEY RUNOFF-CONTROL MEASURES ARE INSTALLED. CLEAR BORROW & DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES. MARK TREES & BUFFER AREAS FOR PRESERVATION.
SURFACE STABILIZATION-TEMPORARY & PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETE.
BUILDING CONSTRUCTION-BUILDINGS, UTILITIES, PAVING.	INSTALL NECESSARY EROSION & SEDIMENTATION CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING & FINAL STABILIZATION-TOPSOILING, TREES & SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP	STABILIZE ALL OPEN AREAS, INCLUDING BORROW & SPOIL AREAS. REMOVE & STABILIZE ALL TEMPORARY CONTROL MEASURES.

TEMPORARY SEEDING TABLE
THE PURPOSE OF TEMPORARY SEEDING IS TO TEMPORARILY STABILIZE DENUDED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD AS NOTED IN THE TABLE BELOW;

SITE GRADING ACTIVITY DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES & SLOPES	7 DAYS	NONE
HIGH QUAALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1 HOR:VERT	7 DAYS	IF SLOPES ARE LESS THAN 10' IN LENGTH & ARE NOT STEEPER THAN 2:1 HOR:VERT 14 DAYS IS ALLOWED
SLOPES 3:1 HOR:VERT OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
SLOPES 4:1 HOR:VERT OR FLATTER	14 DAYS	NONE (EXCEPT ACTIVITIES 1 &2)

TEMPORARY SEEDING SPECIFICATIONS
SEEDING RECOMMENDATIONS FOR LATE WINTER & EARLY SPRING
SEEDING DATES- DECEMBER 1 TO APRIL 15
SEEDING MIXTURE
SPECIES RATE (LB/ACRE)
WINTER RYE (GRAIN) 120 (ANNUAL RYEGRASS SHALL NOT BE USED)
ANNUAL LESPEDEZA 50
(KOBE)
*OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE

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

MULCH-
APPLY 4,000-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-
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH
IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

SEEDING RECOMMENDATIONS FOR SUMMER
SEEDING DATES- APRIL 15 TO AUGUST 15
SEEDING MIXTURE
SPECIES RATE (LB/ACRE)
GERMAN MILLET 40

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

MULCH-
APPLY 4,000-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-
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND
MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

SEEDING RECOMMENDATIONS FOR FALL
SEEDING DATES- AUGUST 15 TO DECEMBER 30
SEEDING MIXTURE
SPECIES RATE (LB/ACRE)
WINTER RYE (GRAIN) 120
SOIL AMENDMENTS-
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND
AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH-
APPLY 4,000-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-
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 LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

LAND GRADING CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT & MAINTAIN ALL EROSION & SEDIMENTATION CONTROL PRACTICES & MEASURES IN ACCORDANCE WITH THE APPROVED SEDIMENTATION CONTROL PLAN AND CONSTRUCTION SCHEDULE.
2. REMOVE GOOD TOPSOIL FROM AREAS TO BE GRADED AND FILLED, AND PRESERVE IT FOR USE IN FINISHING THE GRADING OF ALL CRITICAL AREAS.
3. SCARIFY AREAS TO BE TOPSOILED TO A MINIMUM DEPTH OF 2 INCHES BEFORE PLACING TOPSOIL.
4. CLEAR & GRUB AREAS TO BE FILLED TO REMOVE TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL THAT WOULD AFFECT THE PLANNED STABILITY OF FILL.
5. ENSURE THAT FILL MATERIAL IS FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER MATERIALS INAPPROPRIATE FOR CONSTRUCTING STABLE FILLS.
6. PLACE ALL FILL IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS, AND COMPACT THE LAYERS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS.
7. DO NOT INCORPORATE FROZEN MATERIAL OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES.
8. DO NOT PLACE FILL ON A FROZEN FOUNDATION, DUE TO POSSIBLE SUBSIDENCE AND SLIPPAGE.
9. KEEP DIVERSIONS AND OTHER WATER CONVEYANCE MEASURES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
10. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH APPROVED METHODS.
11. PROVIDE A GROUNDCOVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 7 CALENDER DAYS, FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDER DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
12. PROVIDE ADEQUATE PROTECTION FROM EROSION FOR ALL TOPSOIL STOCKPILES, BORROW AREAS, AND SPOIL AREAS.

MAINTENANCE
PERIODICALLY CHECK ALL GRADED AREAS & THE SUPPORTING EROSION & SEDIMENTATION CONTROL PRACTICES, AT A MINIMUM OF ONCE A WEEK AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN HALF AN INCH. PROMPTLY REMOVE ALL SEDIMENT FROM DIVERSIONS AND OTHER WATER-DISPOSAL PRACTICES. IF WASHOUTS OR BREAKS OCCUR, REPAIR THEM IMMEDIATELY. PROMPT MAINTENANCE OF SMALL-ERODED AREAS BEFORE THEY BECOME SIGNIFICANT GULLIES IS AN ESSENTIAL PART OF AN EFFECTIVE EROSION & SEDIMENTATION CONTROL PLAN. IMMEDIATE CORRECTIVE ACTION MUST BE TAKEN FOR ANY DEVICE FAILURE. IF SEDIMENT HAS BEEN OBSERVED TO HAVE BEEN DEPOSITED IN A STREAM OR WETLAND, THE DIVISION OF WATER QUAILTY MUST BE NOTIFIED WITHIN 24 HOURS AND A WRITTEN NOTICE PROVIDED WITHIN 5 DAYS.

PERMANENT SEEDING
THE PURPOSE OF PERMANENT SEEDING IS TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS, AND TO PERMANENTLY STABILIZE SUCH AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTS TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT MATERIALS. THESE AREAS MUST BE SEEDED OR PLANTED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS AFTER FINAL GRADE IS REACHED, UNLESS TEMPORARY STABILIZATION IS APPLIED.

PERMANENT SEEDING SPECIFICATIONS
SEEDING RECOMMENDATIONS FOR SUMMER
SEEDING DATES- APRIL TO JULY
SEEDING MIXTURE
SPECIES RATE
COMMON BERMUDAGRASS 10/1,000 SF (SPRIGS)
1-2 LB/1,000 SF (SEED)
SEEDING NOTES-
1. SPRIG OR SOD. MOISTURE IS ESSENTIAL DURING INITIAL ESTABLISHMENT. SOD MUST BE KEPT WATERED FOR 2-3WEEKS, BUT CAN BE PLANTED EARLIER OR LATER THAN SPRIGS.

SOIL AMENDMENTS-
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS OR APPLY 3,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 500 LB/ACRE 10-10-10 FERTILIZER, OR 50 LB/ACRE NITROGEN FROM TURF-TYPE SLOW-RELEASE FERTILIZER. ADD 25-50 LB/ACRE NITROGEN AT 2-3 WEEK INTERVALS THROUGH MIDSUMMER.

SPRIGGING-
PLANT SPRIGS IN FURROWS WITH A TRACTOR-DRAWN TRANSPLANTER, OR BROADCAST BY HAND.

FURROWS SHOULD BE 4-6 INCHES DEEP AND 2 FEET APART. PLACE SPRIGS ABOUT 2 FT. APART IN A ROW WITH ONE END AT OR ABOVE GROUND LEVEL.

BROADCAST AT RATES SHOWN ABOVE, AND PRESS SPRIGS INTO THE TOP 1/2-2 INCHES OF SOIL WITH A DISK SET STRAIGHT SO THAT SPRIGS ARE NOT BROUGHT BACK TOWARD THE SURFACE.

MULCH- DO NOT MULCH.

MAINTENANCE-
WATER AS NEEDED AND MOW TO 3/4 TO 1-INCH HEIGHT. TOPDRESS WITH 40 LB/ACRE NITROGEN IN APRIL, 50 LB IN MAY, 50 LB IN JUNE, 50 LB IN JULY, AND 25 LB IN AUGUST.

NOTE:
THE CONTRACTOR SHALL INDICATE TO THE ENGINEER THE SOURCE FROM WHICH FILL MATERIAL WILL BE OBTAINED FROM. THE MATERIAL SHALL BE FROM A STATE APPROVED SOURCE AND BE PROVIDED TO NCDENR-DLR PRIOR TO COMMENCING WITH ANY ON-SITE CONSTRUCTION ACTIVITIES.

SODDING
THE PURPOSE OF PERMANENT SEEDING IS TO PREVENT EROSION AND DAMAGE FROM SEDIMENT AND RUNOFF BY STABILIZING THE SOIL SURFACE WITH PERMANENT VEGETATION FOR THE PURPOSE OF:
-THE PROVISION OF IMMEDIATE VEGETATIVE COVER IN CRITICAL AREAS
-TO STABILIZE DISTURBED AREAS WITH A SUITABLE PLANT MATERIAL THAT CANNOT BE ESTABLISHED BY SEED.
-TO STABILIZE DRAINAGEWAYS & CHANNELS AND OTHER AREAS OF CONCENTRATED FLOW WHERE FLOW VELOCITIES WILL NOT EXCEED THAT SPECIFIED GRASS LINING.

SODDING SPECIFICATIONS
SOD QUALITY
-SOD SHOULD BE MACHINE CUT AT A UNIFORM DEPTH OF 1/2-2 INCHES
-SOD SHOULD NOT HAVE BEEN CUT IN EXCESSIVELY WET OR DRY WEATHER.
-SECTIONS OF SOD SHOULD BE STANDARD SIZE AS DETERMINED BY THE SUPPLIER, UNIFORM, AND UNTORN.
-SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN LIFTED BY ONE END.
-HARVEST, DELIVERY, AND INSTALLATION OF SOD SHOULD TAKE PLACE WITHIN
A PERIOD OF 36 HOURS.

SOIL AMENDMENTS-
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS OR APPLY 2 TONS/ACRE OF PULVERIZED AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER IN THE FALL, OR 5-10-10 IN SPRING.

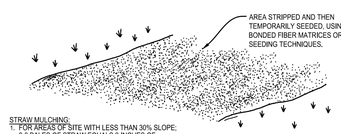
PRIOR TO LAYING SOD, CLEAR THE SOIL SURFACE OF TRASH, DEBRIS, ROOTS, BRANCHES, STONES, AND CLODS LARGER THAN 2 INCHES IN DIAMETER. FILL OR LEVEL LOW SPOTS IN ORDER TO AVOID STANDING WATER. RAKE OR HARROW THE SITE TO ACHIEVE A SMOOTH AND LEVEL FINAL GRADE. COMPLETE SOIL PREPARATION BY ROLLING OR CULTIPACKING TO FIRM SOIL.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. PROPOSED AREAS TO BE DISTURBED CONSIST OF PORTIONS OF THE RIGHTS OF WAY OF THE FOLLOWING STREETS:
   S. CROATAN HWY (US HWY 158) WESTERN RIGHT-OF-WAY MARGIN SPANNING FROM SOUNDSIDE RD. TO DANUBE ST.

   S. CROATAN HWY. (US HWY 158) EASTERN RIGHT-OF-WAY MARGIN SPANNING FROM DUNE ST. TO DEERING ST.
1. THE WORK GENERALLY CONSISTS OF THE CONSTRUCTION OF A 10' CONCRETE MULTI-USE PATHWAY W/ASSOCIATIVE VEGETATIVE DRAINAGE SWALE CONSTRUCTION ALONG THE WEST SIDE OF US HWY 158 RIGHT-OF-WAY MARGIN AND THE CONSTRUCTION OF A 5' WIDE CONCRETE SIDEWALK ALONG THE EAST SIDE OF US HWY 158 RIGHT-OF-WAY MARGIN.
2. AFTER ACCEPTANCE OF ALL PROJECT WORK, AND FULL ESTABLISHMENT OF PERMANENT VEGETATION, CONTINUED MAINTENANCE OF PERMANENT VEGETATION SHALL BE THE RESPONSIBILITY OF OWNER.
3. PROVIDE A GROUND COVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES, FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN THE TIME FRAMES SET FORTH IN THE GROUND STABILIZATION TIME REQUIREMENTS PROVISIONS IN THE LOWER RIGHT CORNER OF THIS SHEET. IF SAID ACTIVITIES OCCUR OUTSIDE TEMPORARY VEGETATION SEEDING DATES (APRIL 1 THRU SEPT 30) THE TEMPORARY VEGETATION SEEDING SPECIFICATIONS SHALL BE FOLLOWED FOR PLANTING UNTIL THE NEXT APPROPRIATE PERMANENT SEEDING PERIOD, AT WHICH TIME PERMANENT VEGETATION SHALL BE ESTABLISHED ACCORDING TO PERMANENT VEGETATION SEEDING SPECIFICATIONS (SEE PERM AND TEMP SEEDING SPECIFICATIONS THIS SHEET).
4. IF EXCESSIVE WIND EROSION OR STORM WATER RUNOFF EROSION DEVELOPS DURING TIME OF CONSTRUCTION IN ANY LOCATION ON THE PROJECT SITE, ADDITIONAL SAND OR SILT FENCING SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR LOCAL GOVERNING OFFICIAL SO AS TO PREVENT DAMAGE TO ADJACENT PROPERTY. SEE SAND AND FENCE DETAIL THIS SHEET.
5. SOIL EROSION AND SEDIMENTATION CONTROLS TO BE INSPECTED, MAINTAINED AND REPAIRED AS NECESSARY UNTIL PERMANENT VEGETATION OR OTHER EFFECTIVE STABILIZATION IS ESTABLISHED.

CONSTRUCTION SCHEDULE
1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS. NOTIFY ALL UTILITY COMPANIES (BY CONTRACTOR) AND PROPERTY OWNERS (BY OWNER).
2. FLAG AND / OR ROUGH STAKE WORK LIMITS.
3. HOLD PRE-CONSTRUCTION CONFERENCE (OWNER, CONTRACTOR, ENGINEER, AND APPROPRIATE GOVERNMENT OFFICIALS) AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION ACTIVITIES.
4. INSTALL SILT FENCE AND INLET PROTECTION ON EXISTING STRUCTURES.
5. INSTALL NECESSARY TRAFFIC CONTROL MEASURES.
6. COMPLETE CLEARING AND GRUBBING PROCEDURES.
7. CUT EX. ASPHALT PAVEMENT & DISCARD OF AT APPROVED OFF-SITE LOCATION.
8. INSTALL WATER MAIN WHERE SHOWN IN PLANS.
9. INSTALL CONCRETE PATHWAYS AND CURB & GUTTER SECTIONS, AS SHOWN ON PLANS.
10. INSTALL NEW VEGETATIVE SWALES BY CUTTING, OR BY PARTIALLY FILLING EXISTING GRADES, AS APPROPRIATE. LEAVE SWALES 2" TO 4" LOW AS ALLOWANCE FOR SEDIMENT DEPOSITION.
11. CONDUCT PAVEMENT PATCHES/REPAIRS.
12. FINE-GRADE SWALE AREAS. SEED AND MULCH ALL DISTURBED AREAS.
13. ALL EROSION & SEDIMENTATION CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER HEAVY RAINFALL EVENTS, NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
14. ONCE PROJECT AREA IS FULLY STABILIZED, REMOVE EROSION AND SEDIMENT CONTROL MEASURES.

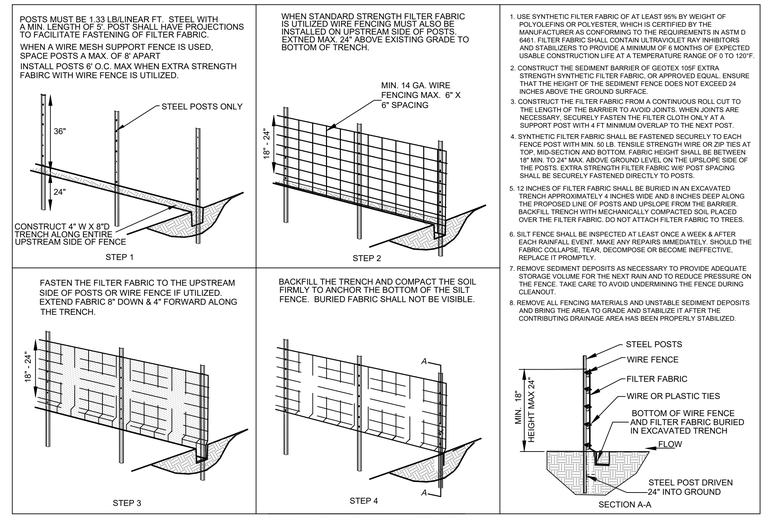


STRAW MULCHING:
1. FOR AREAS OF SITE WITH LESS THAN 30% SLOPE; 2-3 BALES OF STRAW EQUALS 2-INCHES OF STRAW MULCH OVER 1000 SQARE FEET.
2. MULCH SHALL BE WEED FREE STRAW.

TO PROVIDE TEMPORARY SOIL STABILIZATION BY PLANTING GRASSES AND LEGUMES TO AREAS THAT WOULD REMAIN BARE FOR MORE THAN 7 CALENDAR DAYS WHERE PERMANENT COVER IS NOT NECESSARY OR APPROPRIATE.

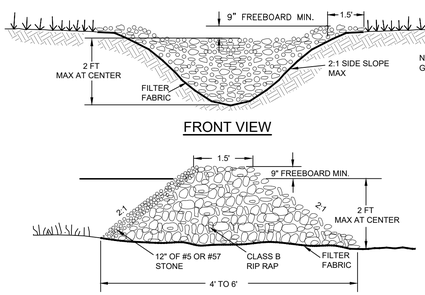
LAND DISTURBANCE & STABILIZATION DETAIL

NOT TO SCALE



TYPICAL SILT FENCING DETAIL

NOT TO SCALE LOCATION AS NOTED ON PLAN



TEMPORARY STONE CHECK DAM CONSTRUCTION

NOT TO SCALE *LOCATIONS AS NOTED ON PLAN*

TEMPORARY STONE CHECK DAM CONSTRUCTION SPECIFICATIONS:
1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSAL OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.

2. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.

3. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.

4. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.

5. ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER.

6. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.

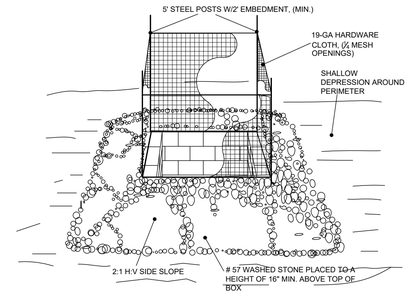
7. MATERIAL USED IN THE STONE SECTION SHOULD BE A WELL-GRADED MIXTURE OF STONE WITH A d50 SIZE OF 9 INCHES(CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14 INCHES. THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT.

8. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.

9. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACES STONES.

MAINTENANCE OF TEMPORARY STONE CHECK DAMS:
INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (¼" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS WHEN NEEDED.

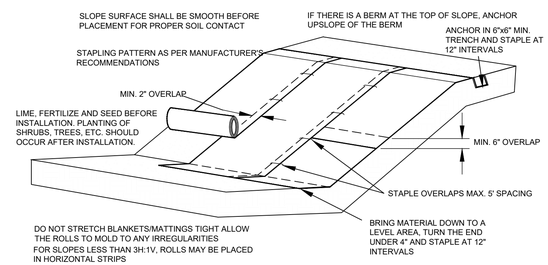
REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.



CONSTRUCTION SPECIFICATIONS
1. UNIFORMLY GRADE A SHALLOW DEPRESSION AROUND INLET.
2. DRIVE 5' STEEL POSTS 2-FT INTO GROUND SURROUNDING INLET. SPACE POSTS EVENLY AROUND INLET, MAX. 4' SPACING.
3. SURROUND POSTS W/WIREMESH HARDWARE CLOTH. SECURE WIRE MESH TO THE STEEL POSTS AT TOP,MIDDLE & BOTTOM. PLACE A 2' FLAP OF WIRE UNDER GRAVEL FOR ANCHORING.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE TO A HEIGHT OF 16' AROUND BARRIER AND SMOOTH TO EVEN GRADE.
5. ONCE CONTRIBUTING DRAINAGE AREAS IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, & ESTABLISH FINAL GRADE.
6. COMPACT THE AREA PROPERLY & STABILIZE W/GROUNDCOVER.

DROP INLET BARRIER INSTALLATION

NOT TO SCALE LOCATIONS AS NOTED ON PLAN ISOMETRIC VIEW



REINFORCED STABILIZATION MATTING INSTALLATION

NOT TO SCALE SLOPE INSTALLATION

NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-8-2019

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
252.441.6221 • www.nagsheadnc.gov

NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: NONE
VERTICAL:

DRAWING TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

DRAWING NO.: C-13
SHEET NO.: SHEET 13 OF 17

WATERLINE NOTES AND SPECIFICATIONS

I. WATER DISTRIBUTION SYSTEM

1. RELATION OF WATER MAINS TO SEWERS

(A) LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION--IN WHICH CASE:

(1) THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR

(2) THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

(B) CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION--IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

(C) CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

2. WATER DISTRIBUTION PIPE

(A) PVC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D-2241 & AWWA C-900-07 FOR WATER DISTRIBUTION. PIPE SHALL BE C900 INTEGRAL BELL PVC PRESSURE PIPE WITH 20 FOOT LENGTH, AND A SOLID ELASTOMETRIC RING AS FURNISHED BY NORTH AMERICAN PIPE CORPORATION, J-M MANUFACTURING, OR NATIONAL PIPE & PLASTICS, INC. PIPE SHALL BE MADE WITH PVC COMPOUND ACCORD WITH ASTM D1784. PIPE SHALL CONFORM WITH THE TESTING REQUIREMENTS OF ASTM D1599 AND ASTM D2444. PUSH ON JOINTS SHALL COMPLY WITH ASTM D3139, AND RUBBER GASKETS SHALL COMPLY WITH ASTM F477. PVC WATERLINES MUST BEAR NATIONAL SANITATION FOUNDATION LOGO AND COMPLY WITH NSF STANDARD 61.

(B) FUSIBLE PVC PIPE SHALL CONFORM TO AWWA C900, AWWA C905, ASTM D2241 OR ASTM D1785 FOR STANDARD DIMENSIONS, AS APPLICABLE. TESTING SHALL BE IN ACCORDANCE WITH THE REFERENCED AWWA STANDARDS FOR ALL PIPE TYPES.

PIPE SHALL BE MANUFACTURED WITH 100% VIRGIN RESIN. PIPE SHALL ALSO HAVE 0% RECYCLED PLASTICS CONTENT, AND SHALL NOT CONSIST OF ANY REWORK COMPOUND, EVEN THAT OBTAINED FROM THE MANUFACTURER'S OWN PRODUCTION USING THE SAME FORMULATION.

FUSIBLE PVC PIPE SHALL BE EXTRUDED WITH PLAIN ENDS. THE ENDS SHALL BE SQUARE TO THE PIPE AND FREE OF ANY BEVEL OR CHAMFER. THERE SHALL BE NO BELL OR GASKET OF ANY KIND INCORPORATED INTO THE PIPE.

FUSIBLE PVC PIPE SHALL BE MANUFACTURED IN A STANDARD 40' NOMINAL LENGTH, OR CUSTOM LENGTHS AS SPECIFIED IN THE PLANS.

FUSIBLE PVC PIPE SHALL BE BLUE IN COLOR FOR POTABLE WATER USE.

PIPE SHALL BE MARKED AS FOLLOWS:

- NOMINAL PIPE SIZE
- PVC
- DIMENSION RATIO (DR), STANDARD DIMENSION RATIO (SDR), OR SCHEDULE
- AWWA PRESSURE CLASS, OR STANDARD PRESSURE RATING FOR NON-AWWA PIPE, AS APPLICABLE
- AWWA STANDARD DESIGNATION NUMBER, OR PIPE TYPE FOR NON-AWWA PIPE, AS APPLICABLE
- NSF-61 MARK VERIFYING SUITABILITY FOR POTABLE WATER SERVICE
- EXTRUSION PRODUCTION-RECORD CODE
- TRADEMARK OR TRADE NAME
- CELL CLASSIFICATION 12454 AND/OR PVC MATERIAL CODE 1120 MAY ALSO BE INCLUDED
- PIPE SHALL BE HOMOGENEOUS THROUGHOUT AND BE FREE OF VISIBLE CRACKS, HOLES, FOREIGN MATERIAL, BLISTERS, OR OTHER VISIBLE DELETERIOUS FAULTS.

DUCTILE IRON PIPE SHALL BE CORROSION RESISTANT BONDED COATING TYPE DESIGNED AS PER ANSI A21.50 FOR A WORKING PRESSURE OF 150 PSI, LAYING CONDITION B. PIPE SHALL BE CLASS 50, AND MANUFACTURED AS PER AWWA C151 IN 18 FOOT LENGTHS.

PIPE JOINTS SHALL BE OF THE PUSH-ON TYPE AS PER AWWA C151, PARAGRAPH 51-2.6. PIPE LINING SHALL BE CEMENT MORTAR WITH A SEAL COAT OF BITUMINOUS MATERIALS, ALL IN ACCORDANCE WITH AWWA C104 AS MANUFACTURED BY GRIFFIN, U.S. PIPE, AMERICAN OR CLOW.

3. PIPE FITTINGS 2" AND LARGER SHALL BE CAST OR DUCTILE IRON DESIGNED AND MANUFACTURED AS PER AWWA C153. SIZES OF FITTINGS UP TO AND INCLUDING 12 INCH SHALL BE DESIGNED FOR AN INTERNAL PRESSURE OF 350 PSI; LARGER SIZE FITTINGS SHALL BE DESIGNED FOR AN INTERNAL PRESSURE OF 250 PSI. ALL FITTINGS SHALL BE CLOW, TYLER, AMERICAN OR GRIFFIN. JOINTS FOR FITTINGS SHALL BE MECHANICAL JOINT AND LINED WITH CEMENT MORTAR WITH A SEAL COAT OF BITUMINOUS MATERIAL; ALL IN ACCORDANCE WITH AWWA C104.

4. REACTION BLOCKING FOR ALL FITTINGS OF COMPONENTS SUBJECT TO HYDROSTATIC THRUST SHALL BE SECURELY ANCHORED BY THE USE OF CONCRETE THRUST BLOCKS POURED IN PLACE. WRAP FITTINGS IN 6 MIL PLASTIC BEFORE POURING BLOCKING CONCRETE. MATERIAL FOR REACTION BLOCKING SHALL BE 3000 PSI CONCRETE.

5. ALL MATERIALS, METHODS OF INSTALLATION, TESTING, DISINFECTION AND FLUSHING SHALL BE IN ACCORDANCE WITH THE WATER LINE STANDARDS OF THE TOWN OF NAGS HEAD, NCDENR DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION SERIAL # 9653, AND 15A NCAC 18C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING CONSTRUCTION RECORD INFORMATION AT THE COMPLETION OF THE INSTALLED IMPROVEMENTS.

6. VALVES.

A. VALVES SHALL BE PLACED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE TOWN.

B. THE VALVE SHALL BE SET PLUMB.

D. A VALVE BOX SHALL BE PROVIDED FOR EACH VALVE. THE BOX SHALL NOT TRANSMIT SHOCK OR STRESS TO THE VALVE WHEN THE BOX COVER IS FLUSH WITH THE SURFACE OF THE PAVEMENT OR SUCH LEVEL AS MAY BE DIRECTED. THE BASE SECTION OF THE VALVE BOX SHALL BE SET TWO INCHES ABOVE THE FLANGED BONNET JOINT OF THE VALVE AND ACCURATELY CENTERED ON THE VALVE OPERATING UNIT.

E. A PRECAST CONCRETE RING SHALL BE PROVIDED AROUND THE TOP OF EACH VALVE BOX, FLUSH WITH THE SURFACE. THE RING SHALL BE A MINIMUM OF 24 INCHES IN DIAMETER.

7. CONNECTIONS SHALL BE MADE WITH SYSTEM PRESSURE OFF, OR AS SPECIFIED BY THE TOWN. EXISTING WATER LINES SHALL BE ADEQUATELY SUPPORTED DURING THE TIE-IN OPERATIONS AND PRIOR TO PLACEMENT OF BACKFILL. REACTION BACKING AND RODDING SHALL BE PLACED BEHIND OR TIED TO ALL TIE-IN OR EXISTING FITTINGS. PRIOR TO CUTTING EXISTING PIPE LINES, THE SURFACE OF THE EXISTING PIPE SHALL BE THOROUGHLY CLEANED BY WIRE BRUSHING AND SCRAPING. DURING ASSEMBLY. CARE SHALL BE EXERCISED IN ORDER TO PREVENT CONTAMINATION OF THE EXISTING WATER LINES

8. (A) FLUSHING. THE WATER SHALL BE FLUSHED BY PROVIDING TAPS IN SUFFICIENT SIZE OR NUMBER TO PROVIDE A VELOCITY OF 2.5 FEET PER SECOND IN THE LINE BEING FLUSHED. HYDRANTS MAY BE USED, PROVIDED THAT THE REQUIREMENTS LISTED AS FOLLOWS ARE MET:

(1)PROCEDURE. A PROCEDURE SCHEDULE SHALL BE SUBMITTED TO THE TOWN OUTLINING THE METHOD PROPOSED TO BE USED FOR FLUSHING WATER LINES. LINES SHALL BE FLUSHED AT A MAXIMUM OF ONE-QUARTER MILE INTERVALS.

(2)TIME FOR FLUSHING. FLUSHING MAY BE DONE PRIOR TO PRESSURE TESTING OR FOLLOWING PRESSURE TESTING, BUT IN ANY CASE, PRIOR TO CHLORINATION OF THE WATER LINE.

(B)CHLORINATION. ALL NEWLY LAID LINES SHALL BE CHLORINATED. THE CONTRACTOR SHALL FURNISH ALL NECESSARY EQUIPMENT AND MATERIALS AND SHALL FURNISH ALL NECESSARY ASSISTANCE FOR EFFECTIVE DISINFECTION OF THE WATER LINES.

(1)PROCEDURE. AFTER THE WATER LINE HAS BEEN PRESSURE TESTED AND FLUSHED, THE CONTRACTOR SHALL PUMP A CHLORINE SOLUTION INTO THE WATER LINE IN SUCH A MANNER AND AT SUCH STRENGTH THAT THE RESIDUAL FREE CHLORINE SHALL BE 50 PPM.

A.HIGH TEST CALCIUM HYPOCHLORITE ("HTH," "PERCHLORENA," "PITTCHLOR"). THE CONTRACTOR SHALL PREPARE A 10,000 PARTS PER MILLION SOLUTION IN WATER AND PUMP AT A CONSTANT RATE INTO THE WATER LINE WHILE BLEEDING OFF THE WATER AT THE EXTREME END. THE BLEED RATE WILL DETERMINE THE FEED RATE OF THE CHLORINE IN ORDER TO ARRIVE AT 50 PPM SOLUTION IN THE WATER LINE.

B.LIQUID CHLORINE. THE CONTRACTOR SHALL PREPARE A 10,000 PARTS PER MILLION SOLUTION IN WATER AND PUMP AT THE CONSTANT RATE INTO THE WATER LINE WHILE BLEEDING OFF THE WATER AT THE EXTREME END. THE RATE OF APPLICATION WILL BE ADJUSTED FOR THE DEGREE OF CONCENTRATION OF THE LIQUID CHLORINE.

C.CHLORINE GAS. CHLORINE GAS SHALL NOT BE USED TO CHLORINATE THE WATER LINE.

(2)POINT OF APPLICATION. THE CHLORINATING AGENT SHALL BE APPLIED AT THE SUPPLY END OF THE LINE THROUGH A CORPORATION COCK. THE WATER FOR INJECTING THE CHLORINE INTO THE NEW LINE MAY BE TAKEN FROM THE PRESSURE SIDE OF THE ISOLATION VALVE OR BY UTILIZING A PRESSURE PUMP. THE STRONG CHLORINE SOLUTION SHALL NOT ENTER THE EXISTING WATER LINE.

(3)RETENTION PERIOD. THE CHLORINATED WATER SHALL BE RETAINED IN THE NEW WATER LINE FOR A PERIOD OF 24 HOURS. WHILE THE CHLORINE SOLUTION IS IN THE LINE, THE CONTRACTOR SHALL OPERATE VALVES IN THE CHLORINATED SECTION TO ENSURE THE COMPLETE DISINFECTION THEREOF.

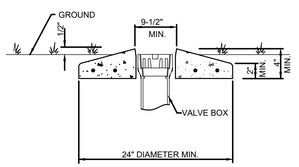
(4)FLUSHING AND TESTING. CHLORINATED WATER SHALL BE FLUSHED FROM THE LINE AT THE END OF THE RETENTION TIME SO THAT THE ENTIRE LINE IS CLEAR OF ANY RESIDUAL CHLORINE. A SAMPLE WILL BE TAKEN FROM THE LINE AFTER THE LINE IS FLUSHED. THE BACTERIOLOGICAL TEST MUST RESULT IN A NEGATIVE BACTERIAL READING BEFORE APPROVAL CAN BE GRANTED BY THE TOWN.

(C)PRESSURE TESTS AND CHLORINATING REPORTS. ALL INFORMATION RELATIVE TO PRESSURE TESTS AND CHLORINATING PROCEDURES AND THE RESULTS SHALL BE REPORTED TO THE PUBLIC WORKS DEPARTMENT, WATER DIVISION. THESE REPORTS SHALL BE SUBMITTED IMMEDIATELY UPON THE COMPLETION OF SUCH TESTS AND DISINFECTING.

9. ALL PRESSURE, LEAKAGE, FLUSHING, & CHLORINATION TESTING SHALL BE COORDINATED AND WITNESSED BY THE NAGS HEAD REPRESENTATIVES.

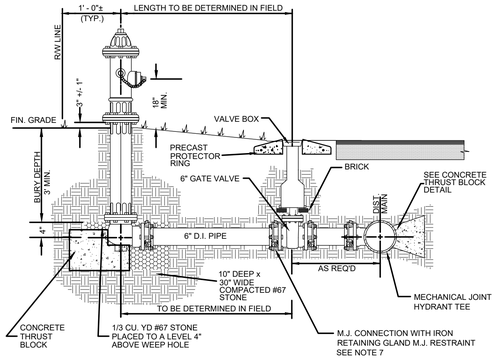
TRENCH DEWATERING DURING UTILITY LINE INSTALLATION

1. ALL GROUND WATER WHICH MAY BE FOUND IN THE TRENCHES AND ANY WATER WHICH MAY GET INTO THEM FROM ANY CAUSE WHATSOEVER SHALL BE PUMPED OR BAILED OUT SO THAT THE TRENCH SHALL BE DRY DURING THE PIPE LAYING PERIOD. ALL WATER PUMPED FROM THE TRENCHES SHALL BE DISPOSED OF IN A MANNER SATISFACTORY TO THE OWNER.
2. IF, DURING ANY TIME THAT CONTRACTOR IS PERMITTED TO LAY PIPE IN A TRENCH CONTAINING UNAVOIDABLE TRENCH WATER AND CONSTRUCTION IS INTERRUPTED FOR ANY REASON, THE OPEN ENDS OF PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR CAPS, OR OTHER MEANS APPROVED BY THE OWNER. IN ANY CASE, SUCH PROTECTION SHALL BE PROVIDED WHEN WORK IS SUSPENDED OVERNIGHT OR ON WEEKENDS AND HOLIDAYS, REGARDLESS OF THE CONDITION OF THE TRENCH WITH RESPECT TO WATER AT THE TIME THAT THE WORK IS SUSPENDED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES, INCLUDING PIPES AND MANHOLES, AGAINST ANY TENDENCY TO FLOAT UNDER CONDITIONS OF HIGH WATER, WHETHER DUE TO HIGH GROUND WATER OR FLOOD CONDITIONS ON THE PROJECT SITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE WHATEVER STEPS MAY BE REQUIRED, INCLUDING THE INSTALLATION AND OPERATION OF PUMPS AND PUMPING SYSTEMS, WELL POINTS OR RELIEF DEVICES, TO PREVENT ANY STRUCTURE FROM FLOATING DURING CONSTRUCTION..
4. COST OF THE NECESSARY PUMPS, WELL POINTS OR OTHER APPURTENANCES REQUIRED TO PREVENT FLOTATION SHALL BE INCLUDED IN THE PROPOSAL/BID DOCUMENTS. ANY DAMAGE WHICH MAY OCCUR TO ANY PART OF THE WORK AS THE RESULT OF THE FLOTATION EFFECT OF GROUND OR FLOOD WATERS SHALL BE REPAIRED IN A MANNER FULLY SATISFACTORY TO THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL PROVIDE AND PLACE ALL NECESSARY FLUMES OR OTHER CHANNELS OF ADEQUATE SIZE TO CARRY TEMPORARILY ALL STREAMS, BROOKS, STORMWATER OR OTHER WATER, WHICH MAY FLOW ALONG OR ACROSS THE LINES OF THE PIPE LINE. ALL FLUMES OR CHANNELS THUS UTILIZED SHALL BE TIGHT SO AS TO PREVENT LEAKAGE INTO THE TRENCHES. WATER PUMPED FROM TRENCHES SHALL BE LED TO NATURAL WATERCOURSES.

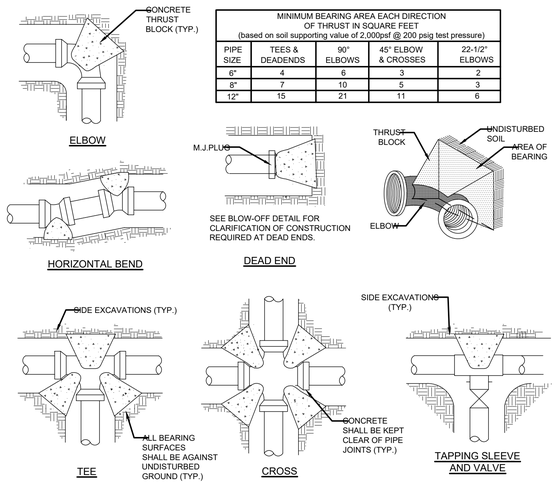


NOTES:
1. CONCRETE PROTECTOR RING SHALL BE 2500 P.S.I. PRECAST REINFORCED CONCRETE
2. VALVE BOX SHALL BE AT GRADE W/PROTECTOR RING EXTENDING 1/2" ABOVE GRADE
3. SEE GATE VALVE AND BOX DETAIL
4. VALVE BOX PROTECTOR RINGS SHALL BE INSTALLED AROUND VALVE BOX IN UNPAVED NON-TRAFFIC AREAS. AND SHALL NOT CREATE A HINDERANCE TO MOWING OPERATIONS.

3/14 CONCRETE PROTECTOR RING
NOT TO SCALE

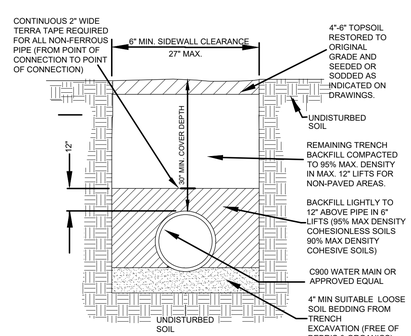


1/14 FIRE HYDRANT ASSEMBLY
NOT TO SCALE



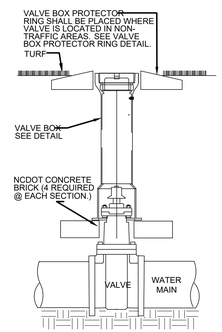
MINIMUM BEARING AREA EACH DIRECTION OF THRUST IN SQUARE FEET (based on soil supporting value of 2,000psf @ 200 psig test pressure)				
PIPE SIZE	TEES & DEADENDS	90° ELBOWS	45° ELBOW & CROSSES	22-1/2° ELBOWS
6"	4	6	3	2
8"	7	10	5	3
12"	15	21	11	6

4/14 CONCRETE THRUST BLOCK DETAILS
NOT TO SCALE



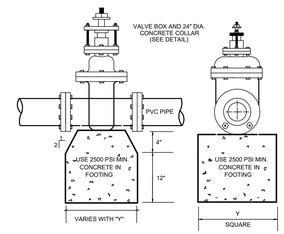
7/14 WATER MAIN BEDDING DETAILS
NOT TO SCALE

NOTES:
1. FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY AMERICAN FLOW CONTROL (MODEL WATEROUS TREND WB77)
2. FIRE HYDRANTS SHALL BE AWWA C-502 OF THE COMPRESSION TYPE AND DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150PSI AND A HYDROSTATIC TEST PRESSURE OF 300 PSI WITH THE VALVE IN BOTH THE OPEN AND CLOSED POSITION. ALL HYDRANTS WILL BE CAST MARKED ON THE OUTSIDE WITH VISIBLE IDENTIFICATION AS TO TYPE AND DESIGN.
3. THE HYDRANT VALVE OPENING SHALL BE A MINIMUM OF 4-1/2 INCHES. HYDRANTS SHALL BE EQUIPPED WITH (2) 2-1/2 INCH HOSE NOZZLES. ALL NOZZLES SHALL HAVE NPT THREADS. NOZZELS SHALL BE BRONZE WITH CAST IRON CAP SECURED THERETO WITH SUITABLE STEEL CHAIN. A DRAIN OUTLET SHALL BE PROVIDED.
4. THE UPPER HYDRANT OPERATING STEM WITHIN THE BONNET SHALL BE SEALED AND LUBRICATED BY MEANS OF AN OIL OR GREASE BATH. THE OPERATING NUT SHALL BE NATIONAL STANDARD PENTAGON TYPE MEASURING 1 ½ INCHES FROM POINT TO FLAT. HYDRANTS SHALL OPEN COUNTERCLOCKWISE.
5. THE HYDRANT SHALL HAVE STAINLESS STEEL BOLTS IN THE BASE AND THE BONNET, AND A "BREAKAWAY" FLANGE THAT WILL ALLOW THE UPPER BARREL TO BE BROKEN OFF WHILE THE HYDRANT VALVE REMAINS CLOSED AND REASONABLY TIGHT.
6. HYDRANTS SHALL BE OF THE "SAFETY" TYPE SO THAT IF THE UPPER BARREL IS BROKEN OFF, THE HYDRANT VALVE WILL REMAIN CLOSED AND REASONABLY TIGHT.
7. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT OR ¾" ALL THREADED ROD.
8. FIRE HYDRANTS SHALL BE PLACED AS DIRECTED BY THE DARE COUNTY WATER DEPT.
9. HYDRANT BRANCH SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY THE DARE COUNTY WATER DEPT. REPRESENTATIVE.
10. GATE VALVE AND BOX SHALL BE IN ACCORDANCE WITH DARE COUNTY STANDARDS.
11. ALL CONNECTIONS SHALL BE COATED WITH COAL TAR EPOXY, OR BITUMASTIC COMPOUND.
12. ALL HYDRANTS SHALL RECEIVE (2) EXTERIOR SHOP COATS OF FIRE HYDRANT RED PAINT AS SPECIFIED BY AWWA C-502. IN ADDITION, ONE FINISH COAT OF FIRE ENGINE RED PAINT SHALL BE APPLIED AFTER CONSTRUCTION OPERATIONS ARE COMPLETE.
13. THE CONTRACTOR SHALL BE REQUIRED TO WRAP AND SEAL PLASTIC BAGS AROUND EACH FIRE HYDRANT SET ON THE PROJECT AND REMOVED WHEN PLACED INTO OPERATION.



VALVE IN NON-TRAFFIC AREA

GATE VALVE DETAIL
SCALE: NONE

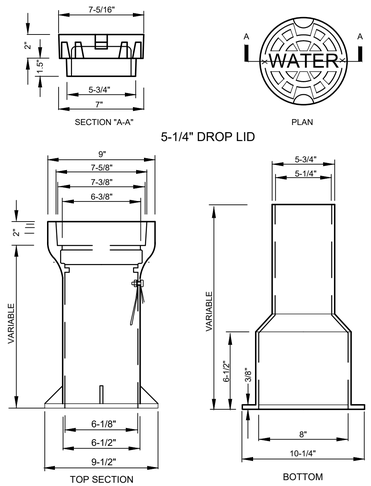


BEARING SURFACE AREA FOR GRAVEL, COURSE SAND(1600PSF)	
VALVE SIZE	Y (INCHES)
2"	9"
4"	18"
6"	27"

STANDARD VALVE FOOTING FOR PVC MAINS
NOT TO SCALE

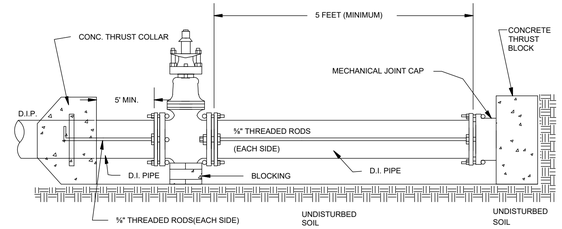
NOTES:
1. THRUST BLOCKS SHALL BE INSTALLED ON WATER DISTRIBUTION LINES 6" THRU 12" DIAMETER IN THE MANNER SHOWN.
2. PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINT JOINT PIPE FOR THE PROPER LENGTH.
3. COMPACT FITTINGS ARE NOT ACCEPTABLE. STANDARD FITTINGS SHALL BE USED WITH CONCRETE THRUST BLOCKING.
4. THRUST BLOCKS SHALL BE INSTALLED ON WATER MAIN IN THE MANNER SHOWN.
5. IF SAC-CRETE IS USED, MIXING MUST BE ON SITE UTILIZING A MECHANICAL MIXER.
6. NO CONCRETE SHALL BE PLACED ON BOLTS. WRAP JOINT FITTINGS WITH PLASTIC.
7. CONCRETE SHALL BE A MINIMUM 3,000PSI.
8. ALL BEARING SURFACES SHALL BE AGAINST UNDISTURBED SOIL AND SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO PLACEMENT OF CONCRETE.
9. ALL VERTICAL BENDS SHALL BE RESTRAINED USING RESTRAINED JOINT DUCTILE IRON PIPE.

5/14 WATER MAIN BEDDING DETAILS
NOT TO SCALE



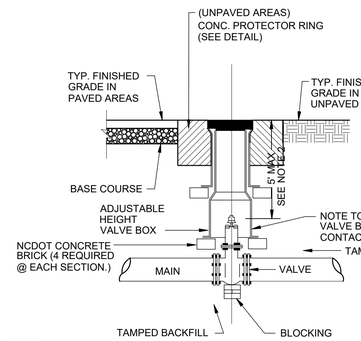
8/14 VALVE BOX DETAIL
NOT TO SCALE

NOTES
1. VALVE BOX SHALL BE 2 PART SLIP-TYPE MANUFACTURED BY ALABAMA PIPE CO. , CHAPMAN VALVE CO., COLOMBIAN IRON WORKS R.D. WOOD CO. OR APPROVED EQUAL.
2. VALVE BOX SHALL BE 2-PIECE CLOSE GRAINED CAST IRON SLIP-TYPE VALVE BOX WITH A MINIMUM THICKNESS OF 3/16".
3. VALVE BOX SHALL HAVE RAISED LETTERS "WATER" CAST INTO COVER.
4. VALVE BOX ACCOMMODATES 4" THRU 12" VALVES.
5. VALVE BOX SHALL HAVE (1) COAT OF PROTECTIVE BITUMOUS PAINT.
6. SCREW TYPE VALVE BOXES ARE NOT ACCEPTABLE.
7. DIMENSIONS SHOWN ARE FOR INFORMATION ONLY AND VARY BASED UPON THE MANUFACTURER.



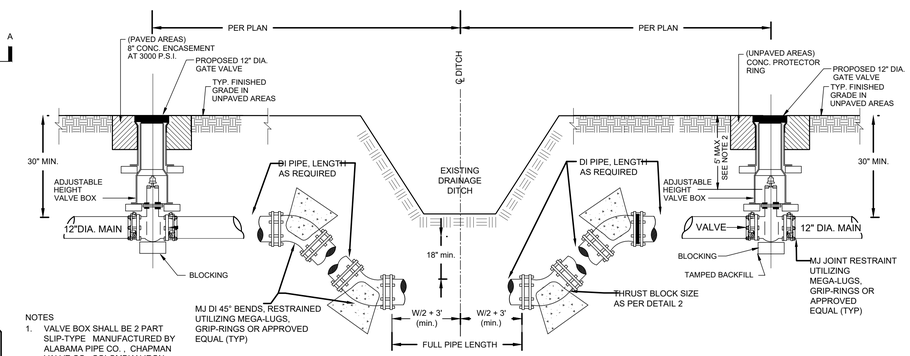
NOTES:
THIS DETAIL SHALL APPLY ONLY TO TEMPORARY CAPPING.

2/14 STANDARD CAPPING DETAIL
NOT TO SCALE



NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH AWWA STANDARDS.
2. RESILIENT WEDGE GATE VALVE SHALL BE AS MANUFACTURED BY WATEROUS OR CLOW CORP.
3. ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTERCLOCKWISE.
4. VALVE BODY, BONNET AND GATE SHALL BE IN ACCORDANCE WITH AWWA C-509/C-515 AND NSF61.
5. VALVE BODY AND BONNET SHALL BE COATED ON ALL INTERIOR AND EXTERIOR SURFACES WITH A FUSION BONDED EPOXY IN ACCORDANCE WITH AWWA C-550-90.
6. ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250 PSI.
7. SEE VALVE BOX DETAIL FOR ADDITIONAL INFORMATION.
8. SEE VALVE BOX PROTECTOR RING DETAIL FOR ADDITIONAL INFORMATION.
9. VALVE BOX SECTIONS ARE REQUIRED. THE USE OF PIPE IN LIEU OF VALVE BOX SECTIONS SHALL NOT BE PERMITTED.

6/14 STANDARD VALVE BOX INSTALLATION
NOT TO SCALE



NOTES:
1. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH ENGINEER AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
2. ALL FITTINGS AND PIPE TO BE RESTRAINED UTILIZING MEGA-LUGS, GRIP-RINGS OR APPROVED EQUAL.
3. ALL PIPE AND FITTINGS TO BE DUCTILE IRON.
4. BACKFILL AND COMPACT TO N.C.D.O.T. REQUIREMENTS.
5. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT RELOCATED WATER MAIN AND/OR NEW STORM DRAIN, AS APPROVED BY TOWN OF NAGS HEAD PROJECT COORDINATOR.
6. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE
7. TOWN OF NAGS HEAD PERSONNEL SHALL BE PRESENT DURING WORK
8. DIMENSIONS ARE GIVEN AS GUIDANCE, EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS

9/14 WATER CROSSING CONFLICT (DITCH)
NOT TO SCALE

NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
252.441.6221 • www.nagsheadnc.gov

NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL: NONE
VERTICAL:

DRAWING TITLE:
WATERLINE CONSTRUCTION DETAILS

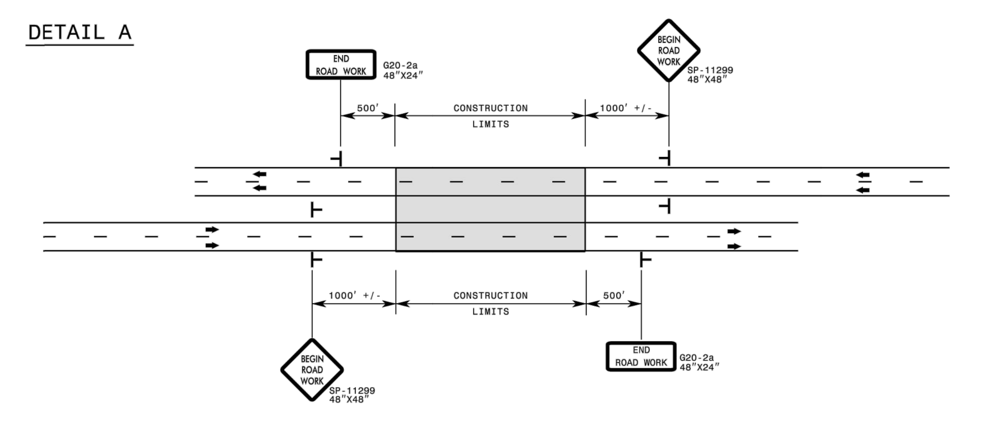
DRAWING NO.: C-14
SHEET NO.: SHEET 14 OF 17

WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH

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

ROADWAY STANDARD DRAWING FOR WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH — SHEET 2 OF 3 — 1101.01

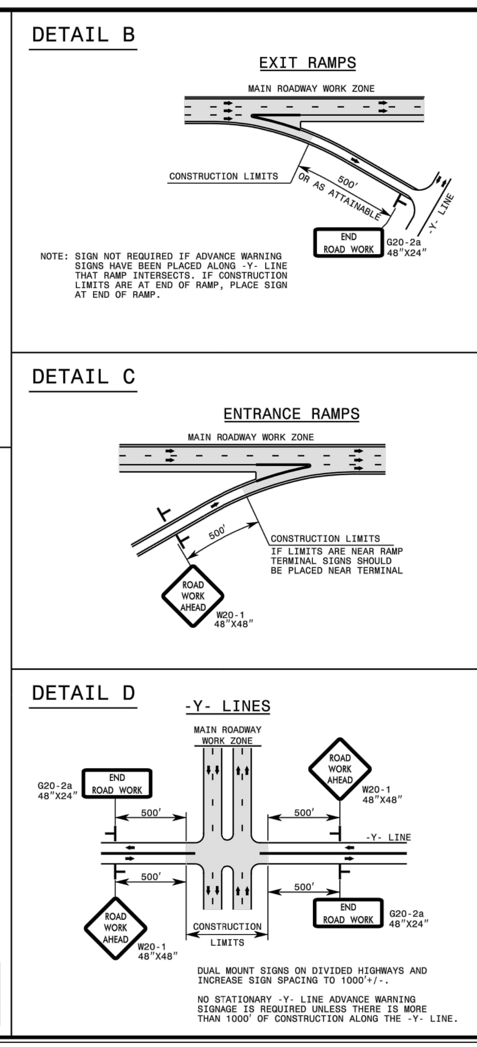
DETAIL A



DETAIL B — EXIT RAMPS

DETAIL C — ENTRANCE RAMPS

DETAIL D — -Y- LINES



GENERAL NOTES

1- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.

2- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT LONGER THAN 3 CONSECUTIVE DAYS.

3- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.

4- ERECT SIGNS PER RSD. 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATIONS FOR WORK ZONE SIGNS.

5- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH RSD. 1110.01.

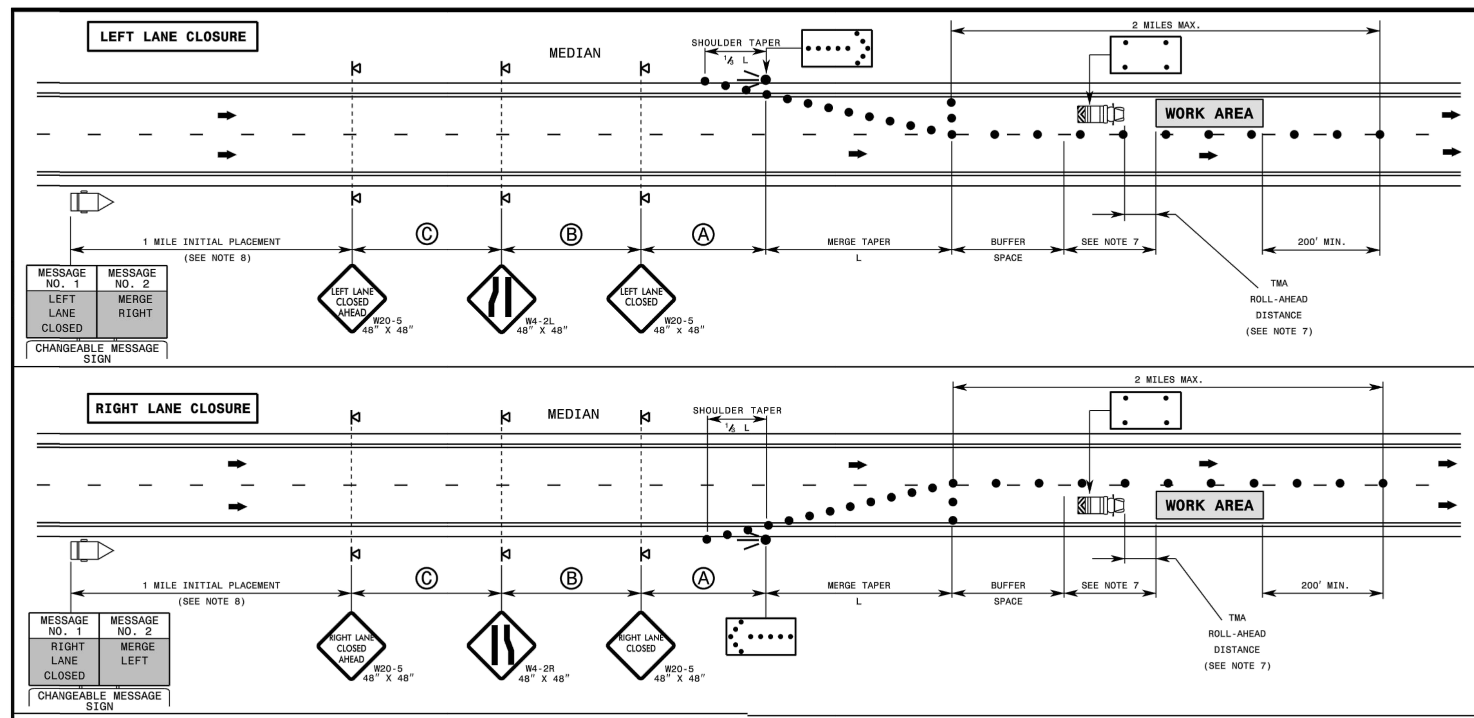
6- DO NOT BACK BRACE SIGN SUPPORTS.

7- TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

TEMPORARY LANE CLOSURES — DIVIDED MULTI-LANE ROADWAY-1 LANE CLOSED (FOR ROADWAYS ≤ 60 MPH)

ROADWAY STANDARD DRAWING FOR TEMPORARY LANE CLOSURES — SHEET 3 OF 14 — 1101.02



GENERAL NOTES

1- IF NECESSARY USE THIS RSD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.

2- PLACE FLASHING ARROW BOARDS (FAB) ON THE SHOULDER (PAVED OR UNPAVED). PLACE FAB WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE FAB LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE FAB IS MET (SEE RSD. 1101.11, SHEET 2).

3- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

4- REFER TO RSD. 1101.11, SHEETS 1, 2, & 4, FOR "L" DISTANCE, BUFFER SPACE, AND SIGN SPACING.

5- REFER TO RSD. 1101.02, SHEETS 9 & 10, FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.

6- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.

7- POSITION THE TMAs TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMAs AS WORK PROGRESSES.

8- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE FIRST W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. MONITOR TRAFFIC, AND WHEN NECESSARY, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.

9- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

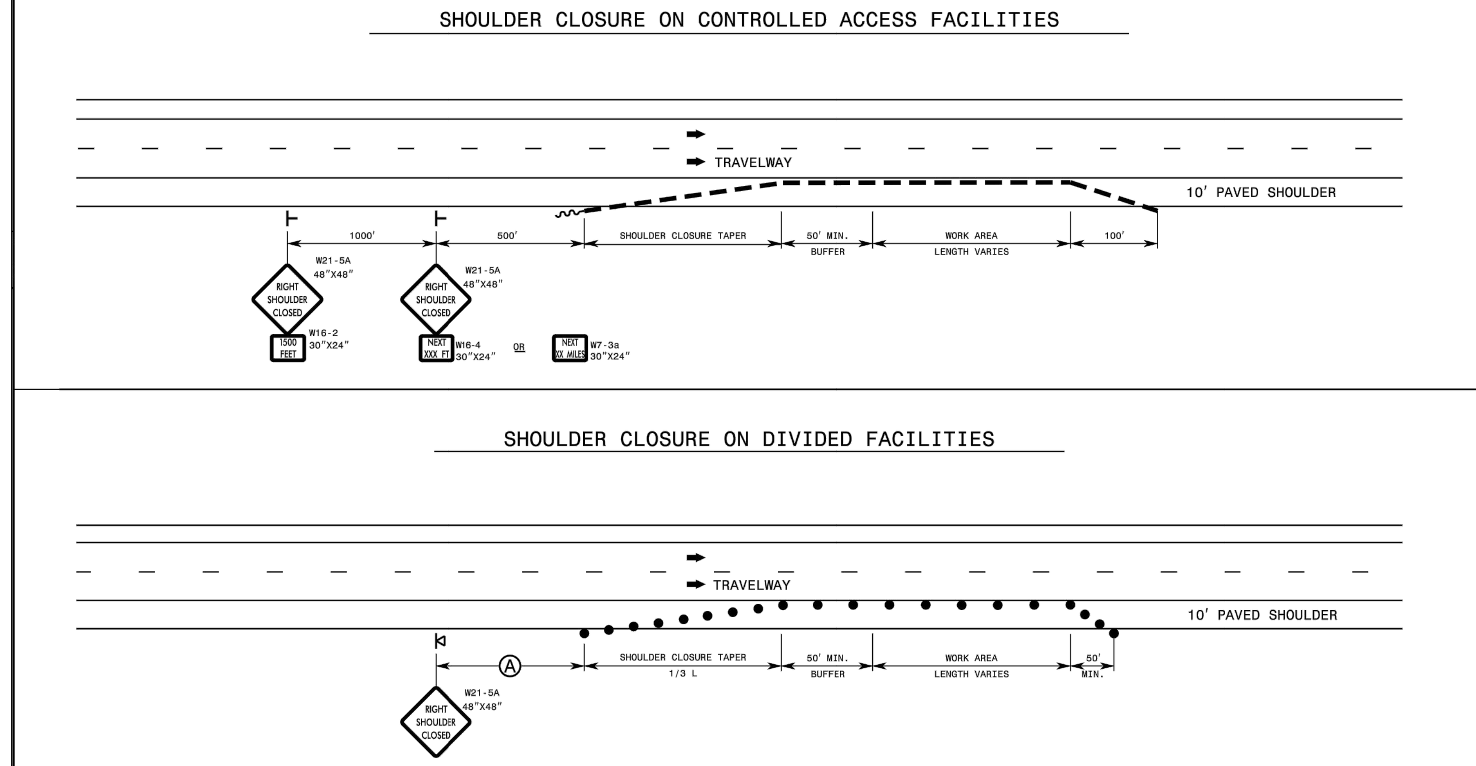
LEGEND
- FLASHING ARROW BOARD
- FLASHING ARROW BOARD (96"X48" MIN.), "CAUTION MODE"
- TRUCK MOUNTED ATTENUATOR(TMA)
- CHANGEABLE MESSAGE SIGN (CMS)
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

TEMPORARY SHOULDER CLOSURES

ROADWAY STANDARD DRAWING FOR TEMPORARY SHOULDER CLOSURES — SHEET 1 OF 1 — 1101.04

SHOULDER CLOSURE ON CONTROLLED ACCESS FACILITIES

SHOULDER CLOSURE ON DIVIDED FACILITIES



GENERAL NOTES

1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.

2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

3- USE STATIONARY SIGNS FOR OPERATIONS IN EFFECT LONGER THAN 3 DAYS.

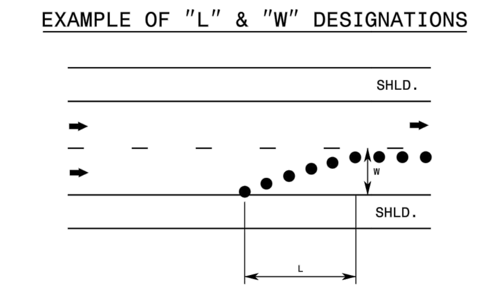
4- REFER TO RSD. 1101.11, SHEETS 1, 3 & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

LEGEND
- DRUM
- STATIONARY SIGN
- PORTABLE SIGN
- PORTABLE CONCRETE BARRIER
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY CRASH CUSHION

TRAFFIC CONTROL DESIGN TABLES — "L" DISTANCE AND CHANNELIZING DEVICE TAPER CRITERIA

ROADWAY STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES — SHEET 1 OF 4 — 1101.11

EXAMPLE OF "L" & "W" DESIGNATIONS



TAPER LENGTH CRITERIA FOR CHANNELIZING DEVICES IN WORK ZONES

TYPES OF TAPERS	TAPER LENGTH
UPSTREAM TAPER	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	½ L MINIMUM
SHOULDER TAPER	⅓ L MINIMUM
TWO-WAY TRAFFIC TAPER	50 - 100 FEET MAXIMUM
DOWNSTREAM TAPER	100 FEET MAXIMUM

DO NOT INTRODUCE A MERGING OR SHIFTING TAPER WITHIN A CURVE OF THE ROADWAY

QUICK REFERENCE - "L" DISTANCE TABLE

MINIMUM LONGITUDINAL DISTANCE "L" (FEET) (ROUNDED VALUES)

POSTED SPEED "S" (MPH)	LATERAL WIDTH "W" (FEET) 1	2	3	4	5	6	7	8	9	10	11	12
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	25	45	65	85	105	125	145	165	185	205	225	245
40	30	55	80	110	135	160	190	215	240	270	295	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

GENERAL NOTES

1- TABLE FOR "L" DISTANCE IS BASED ON CHANNELIZATION TAPER FORMULA FROM THE MUTCD. WHERE:

SPEED LIMIT	FORMULA
40 MPH OR LESS	$L_{MIN} = \frac{W \times S^2}{60}$
45 MPH OR GREATER	$L_{MIN} = W \times S$

L = MINIMUM TAPER LENGTH IN FEET (LONGITUDINAL DISTANCE)
W = WIDTH OF OFFSET IN FEET (LATERAL DISTANCE)
S = POSTED SPEED LIMIT, OR OFF-PEAK 85 PERCENTILE SPEED IN MPH PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

2- "L" DISTANCE IS FOR APPLICATION WITH CHANNELIZING DEVICE AND PAVEMENT MARKING TAPERS AND TRANSITIONS. CHANNELIZING DEVICES INCLUDE DRUMS, CONES, TUBULAR MARKERS, BARRICADES, RAISED ASPHALT ISLANDS, AND VERTICAL PANELS.

TRAFFIC CONTROL DESIGN TABLES — BUFFER SPACE & SIGHT DISTANCE

ROADWAY STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES — SHEET 2 OF 4 — 1101.11

DESIGN SPEED (MPH)	MINIMUM SIGHT DISTANCE: STOPPING SIGHT DISTANCE (FEET)	MINIMUM SIGHT DISTANCE: PASSING SIGHT DISTANCE (FEET)	MINIMUM LONGITUDINAL BUFFER SPACE (FEET)
30	200	1090	85
35	250	1280	120
40	305	1470	155
45	360	1625	195
50	425	1835	240
55	495	1985	290
60	570	2135	345
65	645	2285	405
70	730	2480	470
75	820	2580	540
80	910	2680	615

GENERAL NOTES

1- TABLES ARE BASED ON THE AASHTO GREEN BOOK "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". MINIMUM SIGHT DISTANCE VALUES ARE FOR PASSENGER CAR VEHICLES ON WET AND LEVEL ROADWAYS. CONSULT THE AASHTO GREEN BOOK TO MAKE FINAL DETERMINATION OF STOPPING SIGHT DISTANCE REQUIREMENTS.

2- BUFFER SPACE TABLE IS BASED ON THE BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS.

3- USE OF STOPPING SIGHT DISTANCE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE FOR TRAFFIC APPROACHING A LANE CLOSURE. PROVIDE 2-LANE, 2-WAY ROADWAYS STOPPING SIGHT DISTANCE TO THE FLAGGER. FOR LANE CLOSURES ON MULTILANE ROADWAYS PROVIDE STOPPING SIGHT DISTANCE TO THE BEGINNING OF THE LANE CLOSURE MERGE TAPER, OR FLASHING ARROW BOARD. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED.

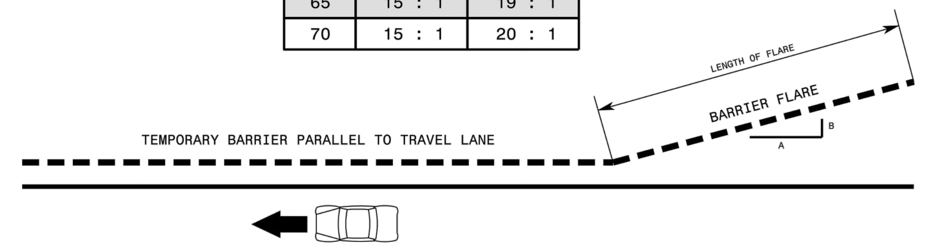
4- USE OF MINIMUM PASSING SIGHT DISTANCE TABLE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE REQUIREMENTS FOR PLACEMENT OF PAVEMENT MARKING PASSING/NO-PASSING ZONES FOR 2-LANE, 2-WAY ROADWAYS.

TRAFFIC CONTROL DESIGN TABLES — TEMPORARY BARRIER FLARE RATES

ROADWAY STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES — SHEET 3 OF 4 — 1101.11

TEMPORARY BARRIER FLARE RATES

POSTED SPEED LIMIT (MPH)	UNANCHORED (A:B)	ANCHORED (A:B)
≤ 30	7 : 1	8 : 1
35	8 : 1	9 : 1
40	8 : 1	10 : 1
45	10 : 1	12 : 1
50	11 : 1	14 : 1
55	12 : 1	16 : 1
60	14 : 1	18 : 1
65	15 : 1	19 : 1
70	15 : 1	20 : 1



GENERAL NOTES

1- REFER TO THE 2011 ROADSIDE DESIGN GUIDE OR THE LATEST EDITION.

2- A BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.

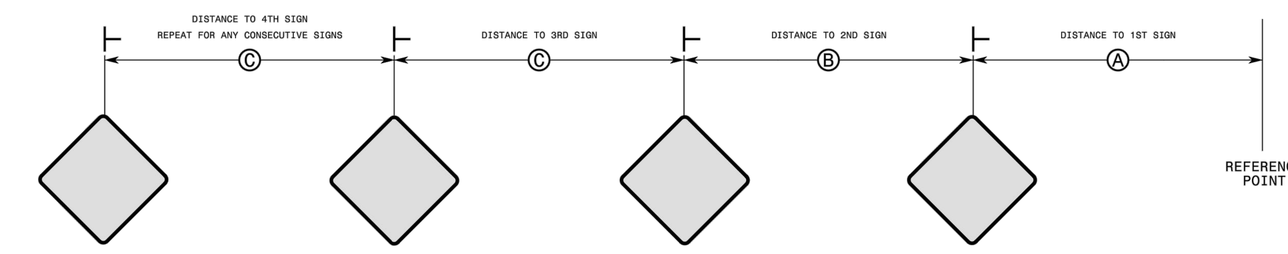
TRAFFIC CONTROL DESIGN TABLES — SPACING OF TEMPORARY SIGNS IN SERIES

ROADWAY STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES — SHEET 4 OF 4 — 1101.11

ADVANCE WARNING SIGN SPACING CHART

POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET)± Ⓐ	Ⓑ	Ⓒ
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

STATIONARY OR PORTABLE SIGNS



GENERAL NOTES

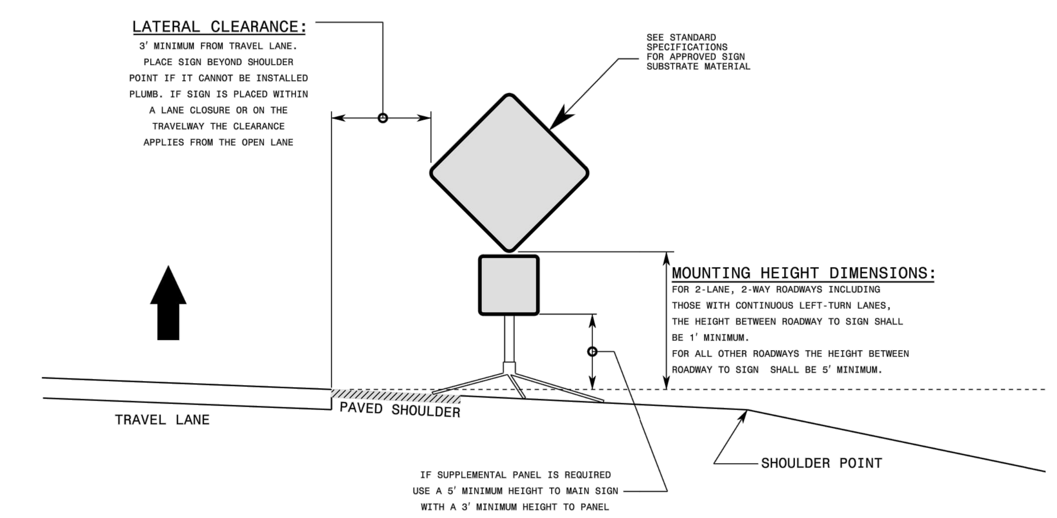
1- REFER TO 2009 MUTCD OR THE LATEST EDITION.

2- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.

3- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

PORTABLE WORK ZONE SIGNS — MOUNTING HEIGHT & LATERAL CLEARANCE

ROADWAY STANDARD DRAWING FOR PORTABLE WORK ZONE SIGNS — SHEET 1 OF 1 — 1110.02



GENERAL NOTES

1- DIMENSIONS SHOWN ARE MINIMUM VALUES. MOUNT SIGNS SO THEY WILL BE CLEARLY VISIBLE TO APPROACHING TRAFFIC EVEN WHEN SIGNS ARE MOUNTED BEHIND TRAFFIC CONTROL DEVICES SUCH AS DRUMS, BARRIER, OR OTHER OBJECTS.

2- ALL PORTABLE SIGNS AND STANDS MUST MEET OR EXCEED THE REQUIREMENTS OF NCHRP 350 FOR CATEGORY II DEVICES. USE PORTABLE WORK ZONE SIGNS AND STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER.

3- ALL PORTABLE WORK ZONE SIGNS AND STANDS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.

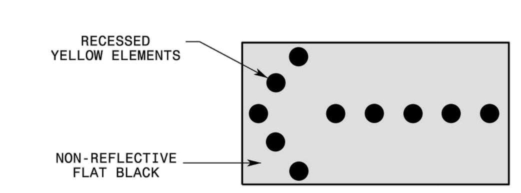
FLASHING ARROW BOARDS

ROADWAY STANDARD DRAWING FOR FLASHING ARROW BOARDS — SHEET 1 OF 1 — 1115.01

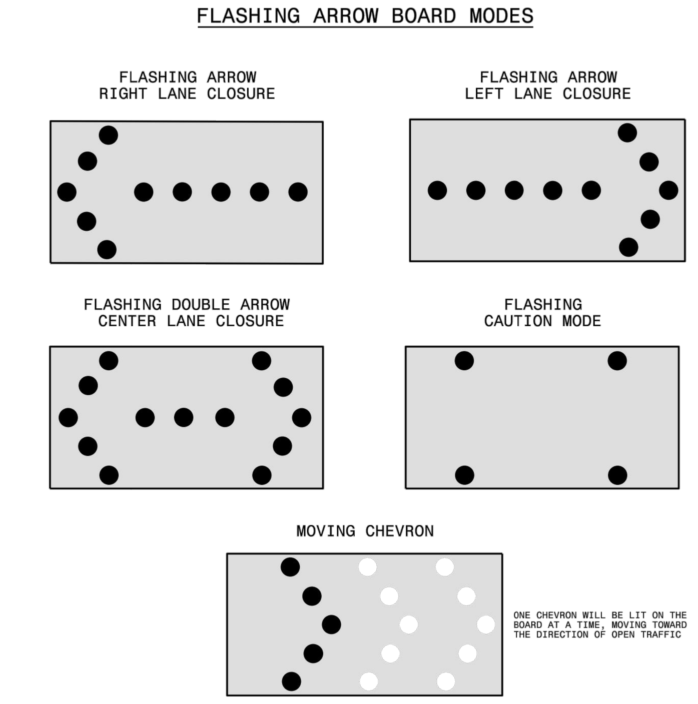
FLASHING ARROW BOARD TYPE

PANEL TYPE	MINIMUM SIZE (W x H INCHES)	MINIMUM LEGIBILITY DISTANCE (MILES)	MINIMUM NUMBER OF ELEMENTS
C	96 X 48	1	15

TYPICAL FLASHING ARROW BOARD



FLASHING ARROW BOARD MODES



GENERAL NOTES

1- DO NOT USE STRAIGHT-LINE CAUTION OR STATIC CHEVRON DISPLAYS.

2- USE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM GROUND LEVEL TO THE BOTTOM OF THE PANEL FOR TRAILER-MOUNTED ARROW BOARDS, EXCEPT ON VEHICLE-MOUNTED PANELS WHICH SHOULD BE AS HIGH AS PRACTICAL.

3- USE ARROW BOARD ELEMENTS CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL RATED LAMP VOLTAGE. USE FULL LAMP VOLTAGE DURING THE DAY, AND USE THE DIMMED MODE AT NIGHT.

4- DO NOT USE ARROW BOARDS IN FLASHING ARROW MODE ON A 2-LANE, 2-WAY ROADWAY DURING A ONE LANE OPERATION, NOR ON MULTILANE ROADWAYS WHEN SHIFTING ALL TRAFFIC LANES LATERALLY.

5- ALL FLASHING ARROW BOARDS MUST BE LISTED ON THE THE DEPARTMENT'S APPROVED PRODUCTS LIST.

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NO.	DATE	REVISION	APPR'D DATE

APPROVALS

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN — 11-1-2019

THE TOWN OF NAGS HEAD N.C. 1961

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
NAGS HEAD, NC 27959
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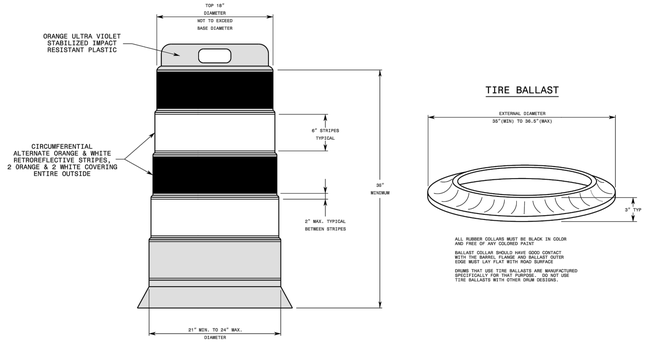
NOTES: ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

DRAWING TITLE: TRAFFIC CONTROL DETAILS

SCALE: HORIZONTAL: VERTICAL:



GENERAL NOTES

1- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL, OR PREFORMED WEIGHTED BASE METHODS. USE THE TIRE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.

2- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

3- ALL DRUMS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCT LIST.

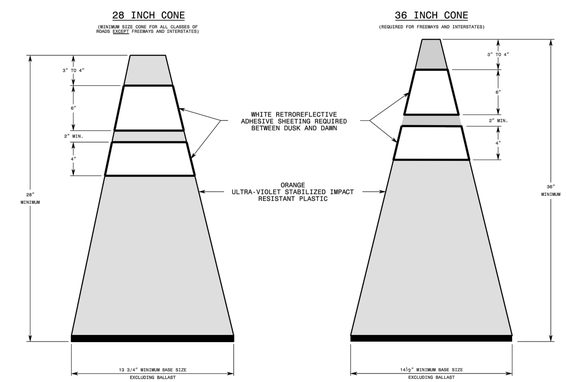
4- REFER TO THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL INFORMATION.

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

1-18

ROADWAY STANDARD DRAWING FOR
DRUMS

SHEET 1 OF 1
1130.01



GENERAL NOTES

1- ACHIEVE BALLASTING BY USING SPECIAL WEIGHTED BASES SUCH AS SAND BAG RINGS, DOUBLING CONES, OR BASES THAT CAN BE FILLED WITH BALLAST. SEVENTY PERCENT OF THE WEIGHT OF THE CONE MUST BE IN THE BASE. USE BALLAST'S THAT DO NOT PRESENT A HAZARD WHEN STRUCK.

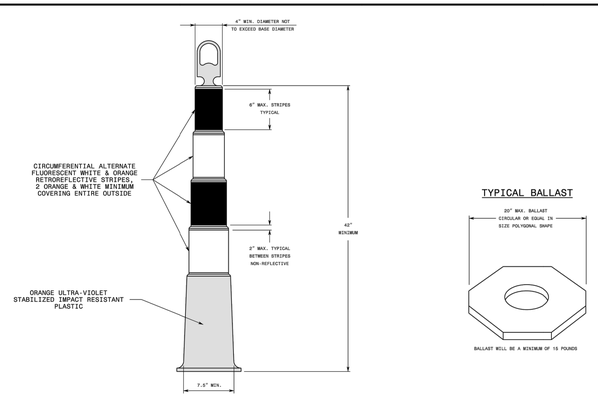
2- ALL CONES MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.

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

1-18

ROADWAY STANDARD DRAWING FOR
CONES

SHEET 1 OF 1
1135.01



GENERAL NOTES

1- USE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.

2- IF NECESSARY, PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

4- REFER TO STANDARD SPECIFICATIONS FOR ROADS AND INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS.

5- ALL SKINNY DRUMS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
SKINNY DRUMS

SHEET 1 OF 1
1180.01

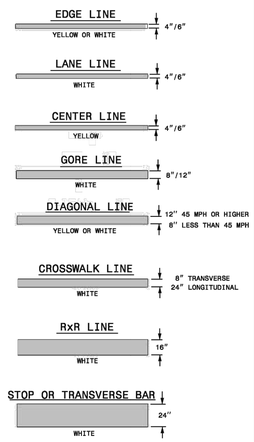
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES AND OFFSETS

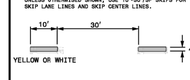
SHEET 1 OF 2
1205.01

CONTINUOUS LINES



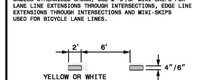
10'-30'/SP SKIP LINE

UNLESS OTHERWISED SHOWN, USE 10'-30'/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



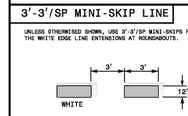
2'-6'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 2'-6'/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND MINI-SKIPS USED FOR BICYCLE LANE LINES.



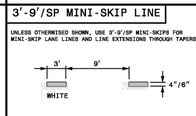
3'-3'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-3'/SP MINI-SKIPS FOR THE WHITE EDGE LINE EXTENSIONS AT ROUNDABOUTS.



3'-9'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-9'/SP MINI-SKIPS FOR MINI-SKIP LANE LINES AND LINE EXTENSIONS THROUGH TAPERS.



GENERAL NOTES:

1- USE 6" LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.

2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

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

1-12

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES AND OFFSETS

SHEET 1 OF 2
1205.01

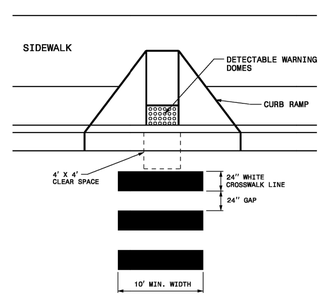
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

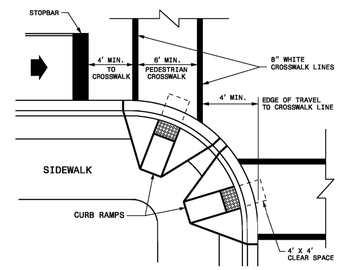
ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
PEDESTRIAN CROSSWALKS

SHEET 1 OF 1
1205.07

HI-VISIBILITY CROSSWALK



STANDARD CROSSWALK



1- THE MINIMUM WIDTH OF STANDARD CROSSWALKS IS 6 FEET. THE MINIMUM WIDTH OF HI-VISIBILITY CROSSWALKS IS 10 FEET.

2- SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.

3- BEYOND THE CURB FACE, A CLEAR SPACE OF 4' X 4' FEET MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE CROSSWALK.

4- PLACE STOP BARS A MINIMUM OF 4 FEET FROM NEAREST CROSSWALK LINE. STOP BARS AT SIGNALIZED INTERSECTIONS SHOULD BE COORDINATED WITH THE SIGNAL DESIGN SECTION OR AS DIRECTED BY THE ENGINEER.

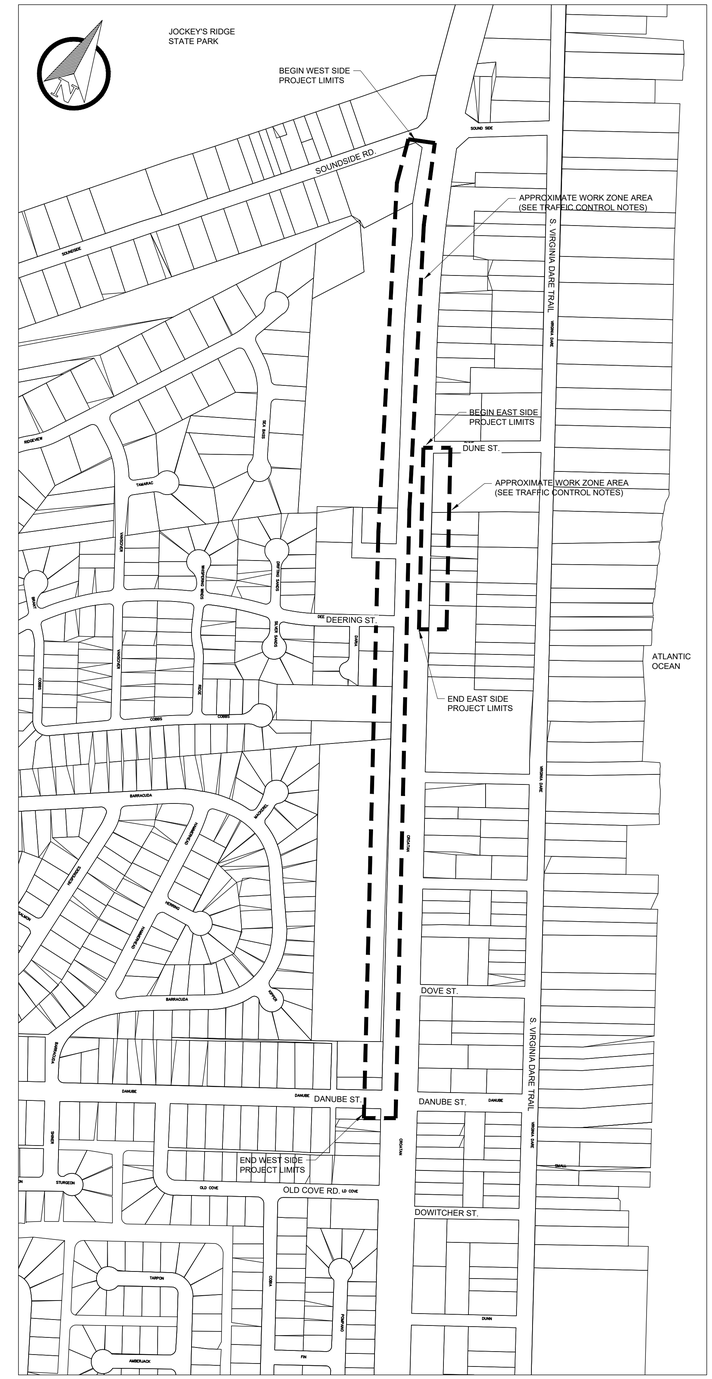
5- CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- CURB RAMP WITH DETECTABLE WARNING DOMES

NOTES:

1. WORK ZONE SIGNS PER NCDOT STANDARD DETAIL SHEET1101.02 SHEET 1 OF 14 REQUIRED.
2. CONTRACTOR SHALL CLOSE ROADWAY SHOULDER IN ACCORDANCE WITH NCDOT STANDARD DETAIL 1101.04 SHEET 1 IN CONSTRUCTION AREA DAILY.
3. CONSTRUCTION SHALL CLOSE 1 LANE PER NCDOT STANDARD DETAIL 1101.02.
4. ALL TRENCHES SHALL BE FILLED IN AT THE END OF CONSTRUCTION EACH DAY.



1/16 WEST SIDE/EAST SIDE PROJECT LIMITS
SCALE: 1" = 300'

NO.	DATE	REVISION	APPR'D	DATE
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-1-2019

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
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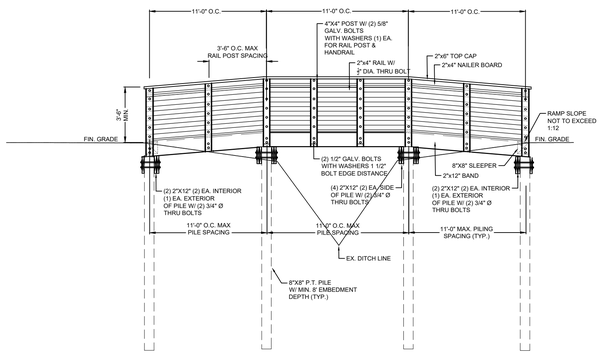
NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL:
VERTICAL:

DRAWING TITLE:
TRAFFIC CONTROL DETAILS

DRAWING NO.: C-16
SHEET NO.: SHEET 16 OF 17



TYPICAL ELEVATED WALKWAY DETAIL

NOT TO SCALE (DETAIL PLAN VIEW FOR WALKWAY DIMENSIONS) (PROFILE VIEW)

DESIGN LOADING:
NCDOT STANDARD SPECIFICATIONS
AASHTOGUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES 1997
BOARDWALK: PEDESTRIAN 85 PSF

RAIL LOADING: 50 PLF APPLIED VERTICALLY & HORIZONTALLY

RAIL POST LOADING: 300 LB APPLIED TO CENTROID OF UPPER RAIL

MATERIALS:

ALL TIMBER SHALL BE TREATED SOUTHERN PINEWITH A MINIMUM RETENTION OF 0.40 LBS/CF. TIMBER PILES SHALL HAVE A MINIMUM RETENTION OF 0.60 LB/CF. CHROMATED COPPER ARSENTAE (CCA) SHALL NOT BE USED ON THE DECK, STAIRS, OR RAILING MEMBERS.

PILING:

PILES SHALL BE IN ONE PIECE, SPLICES ARE NOT ACCEPTABLE.

PILES SHALL BE INSTALLED SO AXIAL ALIGNMENT IS PLUMB

PILES MAY BE PLACED BY AUGER, JETTING, OR DROP HAMMER. PILING SHALL RECEIVE A FINAL SET BY DROP HAMMER OR OTHER APPROVED METHODS, ACCEPTABLE BY THE BUILDING INSPECTOR.

GENERAL NOTES:

ALL CONSTRUCTION TO COMPLY WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS.

ALL CONNECTIONS AND FASTENERS SHALL BE CAPABLE OF DEVELOPING FULL CAPACITY OF THE STRUCTURAL MEMBERS ACCORDING TO THE NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AND NDS SUPPLEMENT.

MEMBER SIZE SHALL BE STANDARD 'DRESSED' DIMENSIONS FOR LUMBER AS SPECIFIED BY THE SOUTHERN PINE INSPECTION BUREAU (SPIB).

ALL THRU BOLTS FOR PILE CAP TO PILE CONNECTIONS SHALL CONFORM TO ASTM FG1554 GRADE 55. SPECIFICATIONS AND SHALL USE OGEE WASHERS, LOCK WASHERS AND NUTS.

ALL 2x6 DECKING SHALL BE FASTENED USING STAINLESS STEEL SCREWS EQUALLY SPACED A MIN. (3) PER JOIST (3 1/4")

ALL FRAMING SHALL BE TRUE & EXACT.

BOLTED FASTENERS SHALL NOT BE OVERTIGHTENED. LAG BOLT CONNECTIONS SHALL BE TIGHTENED SO THAT ELEMENTS COME TOGETHER WITHOUT STRIPPING OUT THE WOOD IN PRE-DRILLED HOLES. THROUGH BOLT CONNECTIONS SHALL BE TIGHTENED SO THAT WASHERS BEGIN TO PRESS INTO THE WOOD SUBSTRATE. ALL THROUGH BOLT CONNECTIONS SHALL HAVE A FLAT WASHER ON BOTH SIDES AND LOCK WASHER UNDER NUTS.

ALL COUNTERSUNK HOLES SHALL BE FILLED WITH AN APPROVED SEALANT.

CUTS, ABRASIONS, NOTCHED MEMBERS, AND BOLT HOLES BORED AFTER PRESERVATIVE TREATMENT SHALL BE TREATED WITH THE SAME PRESERVATIVE AS THE TYPE USE TO TREAT THE PRODUCT. WHEN FIELD APPLICATIONS OF THE PRESERVATIVE ARE REQUIRED, THE MATERIALS SHALL BE FURNISHED, PREPARED, AND APPLIED IN ACCORDANCE WITH AWPA STANDARD M4.

ALL NAILS SHALL BE 12d STEEL SHANKED NAILS CONFORMING TO ASTM F1667 UNLESS OTHERWISE NOTED. ALL LAG BOLTS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/ASME STANDARD B182.1, GRADE 2. ALL CONNECTIONS OR FRAMING NOT OTHERWISE DETAILED ON THE PLANS SHALL BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT THEIR PROPOSED DETAILS FOR APPROVAL PRIOR TO BEGINNING THE WORK OR ORDERING THE MATERIALS. THIS SHALL APPLY TO PROPOSED MATERIAL OR CONSTRUCTION METHOD SUBSTITUTIONS. ALL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 UNLESS OTHERWISE NOTED. NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A563. ALL BOLTS, NUTS, AND WASHERS SHALL BE HOT DIPPED GALVANIZED.

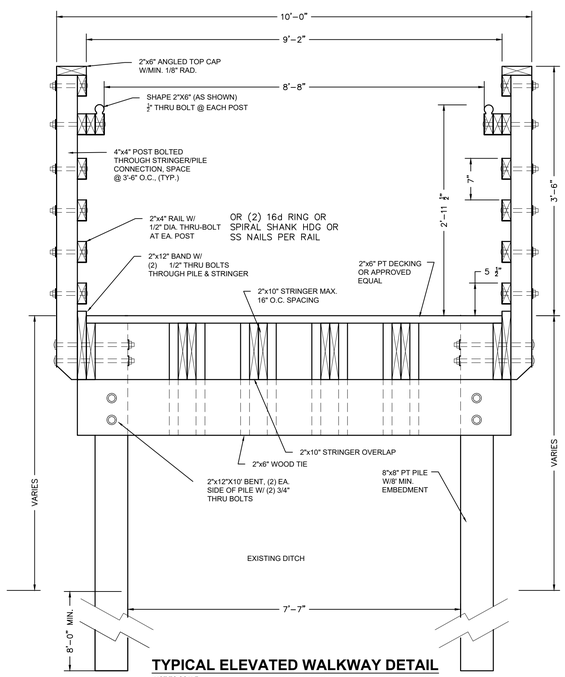
NAILS AND SPIKES SHALL BE DRIVEN WITH HEADS COUNTERSUNK 1/16" BELOW THE SURFACE OF THE WOOD

USE BOLTED CONNECTIONS FOR RAILING, RAILPOST, STRINGER, AND PILE CONNECTIONS.

BLOCKING SHALL BE FASTENED WITH NAILS.

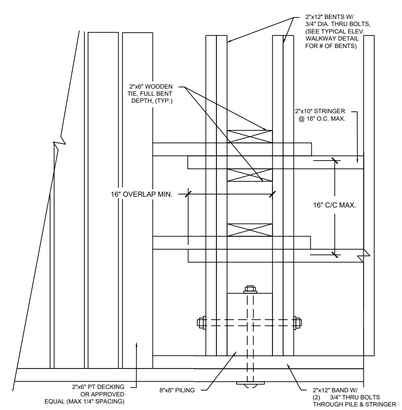
RAMP HANDRAILS SHALL BE 1 1/4" TO 1 1/2" IN WIDTH OR DIAMETER WITH THE OUTSIDE OF THE HANDRAIL A MAXIMUM OF 5 1/2" FROM THE WALL FACE.

HANDICAP HANDRAIL SHALL BE CONTINUOUS ALONG THE LENGTH OF WALKWAY AS SHOWN ON THE ELEVATED WALKWAY PLAN .



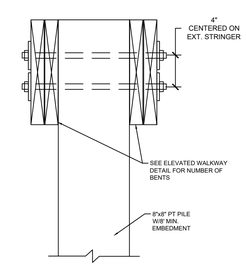
TYPICAL ELEVATED WALKWAY DETAIL

NOT TO SCALE CROSS-SECTIONAL VIEW (SEE PLAN FOR LOCATIONS)



TYPICAL WALKWAY FRAMING DETAIL

NOT TO SCALE (SEE PLAN FOR LOCATION)



PILE CAP CONNECTION DETAIL

NOT TO SCALE (SECTION VIEW)

NO.	DATE	REVISION	APPR'D	DATE
1	11-25-19	REV'D PILING SPACING-ELEV. WALKWAY DETAIL	DMR	
			APPROVALS	

	NAME	DATE
DRAWN BY:	DMR	10-25-19
DESIGNED BY:	DMR	10-25-19
CHECKED BY:	DMR	10-25-19
RECORD DWG:		

NORTH CAROLINA PROFESSIONAL SEAL 030406 ENGINEER DAVID M. RYAN
11-25-2019

THE TOWN OF NAGS HEAD N.C. 1961

TOWN OF NAGS HEAD
DEPARTMENT OF ADMINISTRATION
P.O. BOX 99
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NOTES:
ISSUED FOR BID

CAPITAL IMPROVEMENT PROJECT FY 19/20
PH 8A W. SIDE MULTI-USE PATH PLAN

SCALE: HORIZONTAL:
VERTICAL:

DRAWING TITLE:
ELEVATED WALKWAY DETAILS

DRAWING NO.: C-17 SHEET NO.: SHEET 17 OF 17