THIS PROJECT CONSISTS OF THE INSTALLATION OF A 7'x6' DOUBLE BARREL CONCRETE BOX CULVERT UNDER CHADBOURNE AVE AND APPROXIMATELY 125'± LINEAR FEET OF 8" GRAVITY SEWER, 95'± LINEAR FEET OF 6" WATER MAIN, 101'± LINEAR FEET OF 4" WATER MAIN, AND 1 FIRE HYDRANT. ALONG WITH APPURTENANCES AND OTHER ASSOCIATED PROJECT WORK, FOR THE PURPOSE OF PROVIDING STORM, WATER, AND SANITARY SEWER UPGRADES.

THE PROJECTED AMOUNT OF GROUND DISTURBANCE IS 0.27± ACRES.

WORK SHALL PROCEED IN SUCH A MANNER SO AS TO LIMIT THE AMOUNT OF GROUND DISTURBANCE BY HAVING ONLY ONE SECTION OF THE DITCH OPEN AT A TIME THEREBY REDUCING THE POTENTIAL FOR LARGE QUANTITIES OF SEDIMENT TO BE TRANSPORTED OFF SITE.

SEEDING OF DENUDED AREAS SHALL BE DONE AS SOON AS POSSIBLE, BUT IN NO CASE LONGER THAN SOIL STABILIZATION TIME FRAMES GIVEN IN THE PLANS. REMOVAL OF ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL ONLY BE DONE AFTER APPROVAL HAS BEEN COORDINATED WITH THE DEPARTMENT OF ENVIRONMENTAL QUALITY, THE CITY OF CONCORD, AND THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.


NOTE:

CONDITIONS OF APPROVAL: NO WORK SHOWN IN THIS PLANS SHALL COMMENCE UNTIL THE CITY'S NOTICE TO PROCEED HAS BEEN ISSUED AND THE NCDEQ DWR 401 WATER QUALITY CERTIFICATION AND USACE SECTION 404 PERMIT APPROVALS ARE OBTAINED; AND ANY CONDITIONS IMPOSED BY NCDEQ DWR AND USACE SHALL BE CONSIDERED INCORPORATED HEREIN.
NOTES

1. REMOVAL OF TREES AND SHRUBS ARE TO BE MINIMIZED AS MUCH AS POSSIBLE. CONTRACTOR TO AVOID AND MINIMIZE DAMAGE TO THOSE TREES AND SHRUBS DETERMINED TO REMAIN.

2. ALL EXISTING SERVICE CONNECTIONS TO REMAIN IN SERVICE AND TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL LOCATE AND MAKE PROVISIONS IN ACCORDANCE WITH THE CITY OF CONCORD FOR PROTECTION.

3. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN INGRESS AND EGRESS TO ALL BUSINESSES AND DWELLINGS, AND EASY ACCESS TO FIRE HYDRANTS.

ROAD CLOSED
BARRICADE TYPE III
NCDOT 1145.01
SEE SHT. 15 FOR CLOSURE PLAN

CONTRACTOR TO OPEN CUT ROADWAY AND REPLACE ACCORDING TO CITY OF CONCORD AND NCDOT STANDARDS. SEE SHEET 12 FOR TYPICAL ROADWAY CROSS SECTION

CONTRACTOR TO ENSURE THAT PROPERTY OWNER HAS ACCESS TO DRIVEWAY DURING CONSTRUCTION AT ALL TIMES. IF NEEDED, CONTRACTOR TO BUILD TEMPORARY DRIVEWAY WIDENING WITH DOT ABC MATERIAL. 15” STORM PIPE TO BE EXTENDED UNDER WIDENING. CONTRACTOR TO REINSTATE EXISTING DRIVEWAY AND DITCH TO EXISTING CONDITION.

CONTRACTOR TO REPLACE TWO (2) EXISTING RHODODENDRONS WITH NEW 1.5” CAL. (10 GAL) PLANTS

CONTRACTOR TO TEMPORARILY RELOCATE EX. MAILBOX. MAILBOX SHOULD BE RESET IN ITS ORIGINAL LOCATION AT THE COMPLETION OF PROJECT.

CONTRACTOR TO REMOVE EXISTING 48” CMP AND EXISTING 60” CMP

CONTRACTOR TO REMOVE EXISTING TREES AND SHRUBS LOCATED WITHIN 20’ FROM THE OPENING OF THE EXISTING CULVERTS

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NOTES

1. REMOVE OF TREES AND SHRUBS ARE TO BE MINIMIZED AS MUCH AS POSSIBLE CONTRACTOR TO AVOID AND MINIMIZE DAMAGE TO THOSE TREES AND SHRUBS DETERMINED TO REMAIN.

2. STREAM AREAS IMPACTED DUE TO SITE DEWATERING ACTIVITIES SHALL BE REGRADED TO ITS PRECONSTRUCTION CONTOURS AND REVEGETATED WITH APPROPRIATE NATIVE SPECIES, SUCH AS "BLUE FLAG IRIS", "SOFT RUSH", AND "LIZARD'S TAIL".

3. CONTRACTOR TO USE LOCAL UNSUITABLE MATERIAL AS TOPSOIL.

4. TREE PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CONCORD'S LANDSCAPING TECHNICAL STANDARDS.
NOTES
1. CONTRACTOR TO REPLACE EXISTING ROADWAY ACCORDING TO CITY OF CONCORD AND NCDOT STANDARDS. SEE SHT. 12 FOR TYPICAL CROSS SECTION.
2. PRIVATE UTILITIES, OTHER THAN PRIVATE WATER LINES TO BE RELOCATED BY OTHERS.
3. REMOVAL OF TREES AND SHRUBS ARE TO BE MINIMIZED AS MUCH AS POSSIBLE. CONTRACTOR TO AVOID AND MINIMIZE DAMAGE TO THOSE TREES AND SHRUBS DETERMINED TO REMAIN.
4. CONTRACTOR TO INSTALL PEDESTRIAN SAFETY RAIL ALONG HEADWALLS/WINGWALLS. PAINT COLOR SW 6258 FLAT SHEEN, OR EQUIVALENT. SEE DETAIL IN SHT. 11.
NOTE:

1. THESE PLANS AND DETAILS ARE MEANT TO SHOW THE GENERAL INTENT OF THE WINGWALL DESIGN. CONTRACTOR SHALL HAVE PRECAST MODULAR BLOCK WINGWALLS DESIGNED, DETAILED AND SPECIFIED BY MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE LICENSED IN THE STATE OF NORTH CAROLINA.

2. CONTRACTOR SHALL SUBMIT FINAL DESIGN AND CALCULATIONS TO THE CITY OF CONCORD FOR APPROVAL.

3. CONTRACTOR TO INSTALL PEDESTRIAN SAFETY RAIL ALONG HEADWALLS / WINGWALLS. PAINT COLOR SW 6258 FLAT SHEEN, OR EQUIVALENT. SEE DETAIL IN SHEET 11.
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TEMP. OUTLET. SEE NOTE 2

PROP. M.H.#1
5' DIA INSIDE DROP
STA:0+62.47
RIM:631.83
INV IN:626.10 8" PVC  "E"
INV OUT:614.55 8" DIP "W"

REPLACE EX. M.H. B WITH PROP. MH#2
5' DIA, INSIDE DROP
STA:0+78.50
RIM:628.52
INV IN:615.26 8" PVC  "SW"
INV IN:614.36 8" DIP  "E"
INV IN:618.81 8" PVC  "NW"
INV IN:624.22 8" DIP  "E"
INV OUT:614.16 8" PVC "NE"

PROPOSED 62.47' of 8" DIP SAN. SEWER @ 2.69%
TO BE CONSTRUCTED AFTER PROPOSED BOX CULVERT IS IN PLACE

TEMPORARY SAN. SEWER PIPE TO BE CONSTRUCTED
AND ACTIVATED BEFORE AND DURING CULVERT CONSTRUCTION
62.47' of 8" DIP @ 0.30%
TO BE ABANDONED IN PLACE AND FILLED
AFTER PERMANENT PIPE IS ACTIVATED WHEN CULVERT HAS BEEN INSTALLED

NOTE:
1. ALL EXISTING SERVICE CONNECTIONS TO REMAIN IN SERVICE AND TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL LOCATE AND MAKE PROVISIONS IN ACCORDANCE WITH CITY OF CONCORD STANDARDS FOR PROTECTION.
2. PROPOSED MANHOLE TO BE BUILT FOR TEMPORARY SITUATION. AFTER PERMANENT SEWER LINE HAS BEEN BUILT ON TOP OF CULVERT, CONTRACTOR TO ABANDON BOTTOM PART OF MANHOLE BY FILLING WITH STONE, REMOVING INSIDE DROP, POURING NEW MANHOLE BOTTOM SLAB FOR NEW PERMANENT INS OUT AND CREATING A NEW THROAT.

ENGINEERING DEPARTMENT
CITY OF CONCORD
P.O. BOX 308
CONCORD N.C. 28026
(704) 920-5425

Surveyor's Seal

NOTE:
1. ALL EXISTING SERVICE CONNECTIONS TO REMAIN IN SERVICE AND TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL LOCATE AND MAKE PROVISIONS IN ACCORDANCE WITH CITY OF CONCORD STANDARDS FOR PROTECTION.
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Surveyor's Seal
NOTE: ALL PROPOSED WATER MAIN TO HAVE RESTRAINED JOINTS.

1. PROPOSED WATER LINE LENGTHS APPROXIMATE, ACTUAL LENGTHS AND LOCATION TO BE DETERMINED IN THE FIELD.

2. CONTRACTOR TO FIELD LOCATE EX. GAS LINE AND EX. SANITARY SEWER MAIN, CONTRACTOR TO MAINTAIN MIN. OF AT LEAST 1 FOOT VERTICAL SEPARATION BETWEEN EXISTING UTILITIES AND PROPOSED WATER MAIN.

3. CONTRACTOR SHALL LOCATE AND MAKE PROVISIONS IN ACCORDANCE OF CONCORD STANDARDS FOR PROTECTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN EROSION AND SEDIMENTATION PERMIT FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES FOR ANY NEW OFF-SITE BORROW AREA. ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM AN APPROVED EROSION CONTROL PLAN SITE, A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT.

DEBRIS FROM DEMOLITION ACTIVITIES SHOULD BE DISPOSED OF AT AN APPROVED FACILITY.
NOTES:

1. CONSTRUCT PROPOSED STEEL PIPE RAIL OF 2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

2. REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

3. WHEN PAINTING IS REQUIRED IN THE PLANS, SMOOTH, CLEAN AND PREPARE GALVANIZED SURFACES IN ACCORDANCE WITH SECTION 1080 AND THE ASTM D6386 STANDARD.

4. WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD.

5. VERTICAL POSTS TO BE EVENLY SPACED.

6. CONTRACTOR SHALL HAVE SAFETY RAIL CONNECTIONS DESIGNED, DETAILED AND SPECIFIED BY THE HEADWALLS/WINGWALLS MANUFACTURER OR MANUFACTURER'S REPRESENTATIVE LICENSED IN THE STATE OF NORTH CAROLINA. DESIGN MUST MEET LOADING REQUIREMENTS IN OSHA STANDARD 1910.29(B)(3) AND 1910.29(B)(5). CONTRACTOR SHALL SUBMIT FINAL DESIGN AND CALCULATIONS TO THE CITY OF CONCORD FOR APPROVAL.
CHADBOURNE AVE
CULVERT REPLACEMENT
STANDARD SANITARY SEWER DETAILS
PROJECT # : 2017-026

INSIDE DROP MANHOLE
WITH DROP BOWL
PRECAST CONCRETE MANHOLE

SANITARY SEWER LATERAL INSTALLATION ON PROPOSED SEWER MAIN REPLACEMENT
UTILITY CUT

TRENCHLESS EXCAVATION DETAIL
(NTS)
TYPICAL PIPE CROSSING UNDER ROADWAY RIGHT OF WAYS
(NTS)
TYPICAL END WALL SECTION
(NTS)
TYPICAL
1. THE CONTRACTOR SHALL MAINTAIN THE TRAFFIC CONTROL AS DESCRIBED HEREIN UNLESS THE CONTRACTOR SUBMITS AN ALTERNATE TRAFFIC CONTROL PLAN TO THE CITY OF CONCORD. ENGINEER OR THEIR DESIGNEE MAY DIRECT THE CONTRACTOR TO MODIFY TRAFFIC CONTROL IF, IN THE ENGINEER'S OPINION, TRAFFIC IS NOT MOVING SAFELY OR EFFICIENTLY.

2. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN INGRESS AND EGRESS TO ALL BUSINESSES AND DWELLINGS, AND EASY ACCESS TO FIRE HYDRANTS.

3. POSITION WING BARRICADES ON SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.

**Legend**

- **CLOSED**
- **DETOUR**
- **CONES**
- **DETOUR FOR NORTH & SOUTH BOUND ROAD**
- **ROAD CLOSED TO THRU TRAFFIC R11-2 + TYPE IIIBARRICADE 48"x30"**
- **ROAD CLOSED AHEAD 30"x30"**
- **ROAD CLOSED TO THRU TRAFFIC R11-4 60"x30" TYPE III WING BARRICADE**

**Map Instructions**

- Use the map to visualize the traffic control plan as described in the text. The map includes symbols and annotations indicating detours, closed roads, and traffic control measures.