GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY

ORCHARD STREET AREA SEWER SEPARATION PROJECT

PROJECT NUMBER CWF 2019-05

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JUNE 09, 2022

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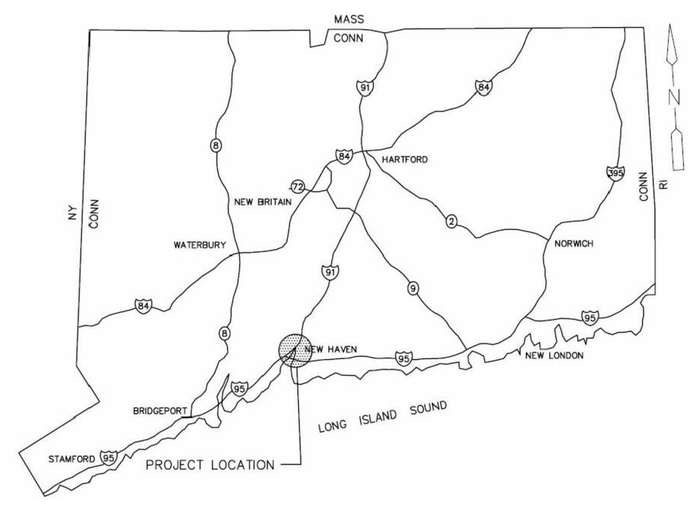

VICINITY PLAN

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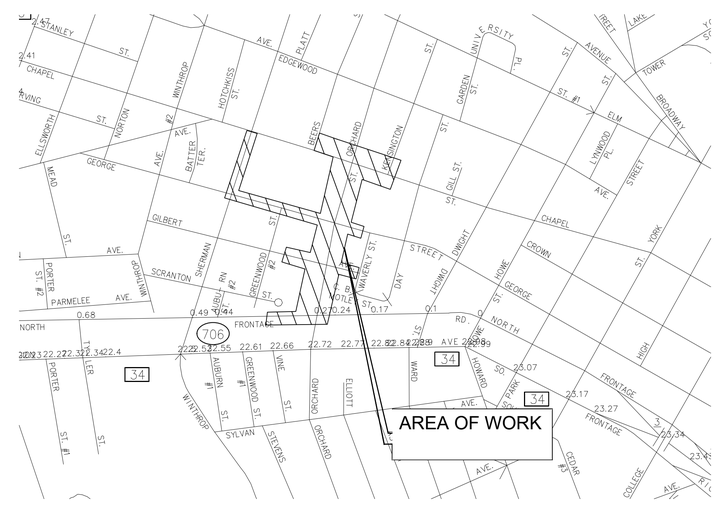


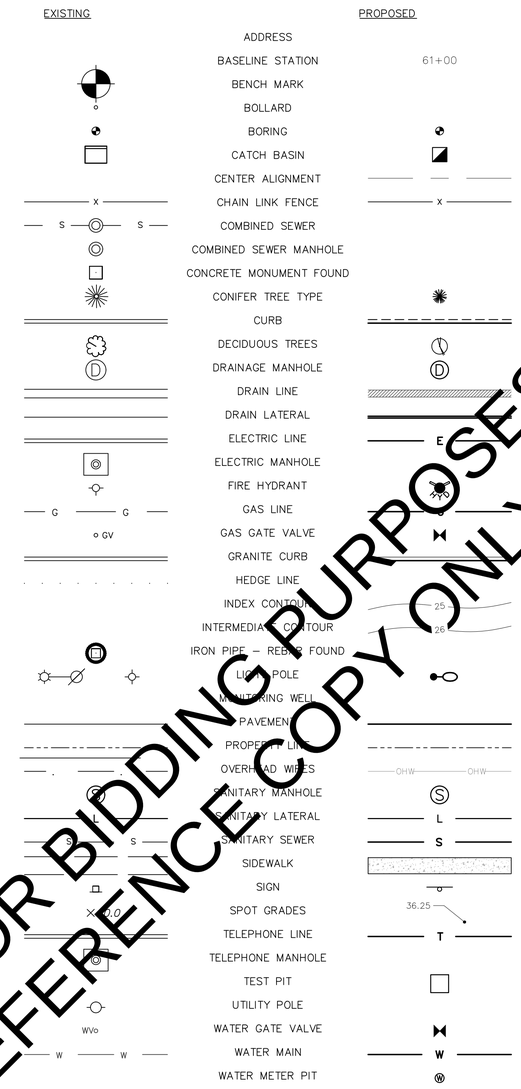
LOCATION PLAN

GENERAL NOTES

1. CALL BEFORE YOU DIG – THE CONTRACTOR IS HEREBY REMINDED THAT THE CONNECTICUT GENERAL STATUES REQUIRE NOTICE TO UTILITY COMPANIES PENDING EXCAVATION AT OR NEAR PUBLIC UTILITIES. THE CONTRACTOR SHALL CALL 1–800–922–4455 AT LEAST 72 HOURS PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE CALL BEFORE YOU DIG PROJECT REFERENCE NUMBERS SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. UTILITY IDENTIFICATION TAPE – AFTER PLACING APPROXIMATELY 2 FEET OF BACKFILL MATERIAL OVER ALL UTILITY PIPING, THE CONTRACTOR SHALL PLACE A 6–INCH WIDE STRIP OF DURABLE, NON–DETECTABLE COLOR CODED (BLUE FOR WATER AND GREEN FOR SANITARY AND STORM SEWERS) UNDERGROUND UTILITY IDENTIFICATION TAPE IMPRINTED WITH AN APPROPRIATE WARNING INDICATING THE PRESENCE OF THE BURIED UTILITY.
3. NO ADJUSTMENTS, HORIZONTAL OR VERTICAL, TO SEWER AND MANHOLE LOCATIONS, CATCH BASIN LOCATIONS, LATERALS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.
4. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS, AND UTILITY HOUSE SERVICES ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM SHOULD THEY BE OTHER THAN SHOWN. LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS AS REPRESENTED BY UTILITY DRAWINGS. ACTUAL LOCATIONS MAY VARY.
5. ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
6. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE GNHWPCA
7. ALL DEWATERING SHALL BE DIRECTED TO SANITARY OR COMBINED SEWERS AT LOCATIONS APPROVED BY THE ENGINEER. DO NOT DISCHARGE GROUNDWATER TO STORM DRAINS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH DEWATERING SYSTEMS INCLUDING THE CTDEEP GENERAL PERMIT REGISTRATION FORM AND FEES. THE GENERAL PERMIT REGISTRATION MUST BE SUBMITTED TO THE CTDEEP AT LEAST 30 DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF ABOVEGROUND OR BURIED UTILITIES DAMAGED DURING CONSTRUCTION OPERATIONS.
9. FLOWABLE FILL MAY BE USED WHERE AUTHORIZED BY THE ENGINEER.
10. ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING AND PLACING TEMPORARY PAVEMENT. EXCAVATIONS MAY BE COVERED BY STEEL PLATES ONLY WHEN APPROVED BY THE ENGINEER.
11. INLET PROTECTION SHALL BE PROVIDED AT ALL CATCH BASINS DURING CONSTRUCTION. HAYABLES OR PRE–MANUFACTURED FABRIC DEVICES MAY BE USED. GEOTEXTILE FABRIC PLACED UNDER THE INLET GRATE IS PROHIBITED.
12. MANHOLE INVERTS SHALL BE SLOPED UNIFORMLY AT A SLOPE CONSISTENT WITH THE GIVEN PIPE SLOPE BETWEEN INLET AND OUTLET PIPE BUT NOT LESS THAN 0.1 FEET. INVERT SHALL BE FORMED AND FILLED AS REQUIRED TO DIRECT FLOW AS INDICATED AND TO PREVENT DEPOSITION OF SOLIDS.
13. FOUR FOOT (4'–0") DIAMETER MANHOLES SHALL BE USED UNLESS OTHERWISE NOTED ON PLANS.
14. OPENINGS FOR PIPE IN PRECAST MANHOLES SHALL BE CAST IN THE REQUIRED LOCATIONS DURING MANHOLE MANUFACTURING. FIELD CUT OPENINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
15. THE CONTRACTOR SHALL BACKFILL WITH FLOWABLE FILL WHEN TUNNELING UNDER EXISTING UTILITIES (SUCH AS ELECTRICAL AND TELEPHONE DUCTS) PRECLUDES COMPACTION OF FILL MATERIAL WITH CONVENTIONAL MEANS.
16. VERTICAL CONTROL: NAVD 1988 HORIZONTAL CONTROL: NAD 1983
17. TOPOGRAPHIC SURVEY WAS CONDUCTED BY PEREIRA ENGINEERING, LLC. FROM JUNE 2020
18. THE OWNER SHALL PROVIDE ELEVATION, HORIZONTAL AND VERTICAL CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEY WORK INCLUDING LAYOUT OF EXCAVATION LIMITS, LINES, AND GRADE FOR WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING LAYOUT MARKS, BENCHMARKS AND CONTROL POINTS PROVIDED BY THE OWNER.
19. TREE PROTECTION SHALL BE PROVIDED FOR TRUNKS OF TREES ADJACENT TO THE WORK. PROTECTION SHALL PROTECT THE TREES FROM INJURY FROM PILED MATERIAL, EQUIPMENT AND SIMILAR OPERATIONS.
20. TREE REMOVALS WITHIN THE PUBLIC RIGHT–OF–WAY SHALL BE COORDINATED WITH AND POSTED BY THE CITY OF NEW HAVEN AT LEAST 14 DAYS PRIOR TO SCHEDULED REMOVAL.
21. BRANCHES, LIMBS, AND ROOTS SHALL NOT BE CUT EXCEPT BY PERMISSION OF THE ENGINEER. ALL CUTTING SHALL BE NEATLY DONE WITHOUT SPLITTING OR CRUSHING.
22. NO WORK ON PRIVATE PROPERTY IS AUTHORIZED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER.
23. THE CONTRACTOR SHALL RECONNECT WATER SERVICES WHERE REQUIRED AND IN COORDINATION WITH REGIONAL WATER AUTHORITY. LOCATIONS OF WATER SERVICE RECONNECTION TO BE FIELD DETERMINED.
24. PLASTIC GAS MAIN EXPOSED DURING EXCAVATION SHALL BE SUPPORTED AS REQUIRED BY SOUTHERN CONNECTICUT GAS COMPANY
25. ALL DIMENSIONS AND ELEVATIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR.
26. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE STATE OF CONNECTICUT 2002 GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL AS AMENDED THROUGH BID DATE OF THIS PROJECT
27. ALL EXISTING FEATURES ARE DRAWN AS SCREENED LINES, AND PROPOSED FEATURES ARE SHOWN AS DARK LINES.
28. PROTECT ALL IRON PINS AND MONUMENTS FROM DISTURBANCE DURING CONSTRUCTION.
29. A GEOTECHNICAL INVESTIGATION WAS PERFORMED FOR THIS PROJECT BY COMPREHENSIVE ENVIRONMENTAL, INC. DATED NOVEMBER, 2020.
30. PROPOSED STORM DRAIN LATERALS ARE SHOWN IN APPROXIMATE LOCATIONS. FINAL LOCATION TO BE CONFIRMED IN FIELD.
31. UTILITY POLE SUPPORT, WHERE INDICATED ON PLANS OR ORDERED BY ENGINEER, MAY ONLY OCCUR DURING THE WORKING DAY. OVERNIGHT UTILITY POLE SUPPORT WILL NOT BE ALLOWED.

ABBREVIATIONS

ABDN	ABANDONED
AC	ASBESTOS CEMENT
AR	AIR RELEASE
B	BORING
BM	BENCH MARK
BO	BLOW OFF
BCLC	BITUMIOUS CONCRETE LIP CURB
BIT	BITUMINOUS
BLDG	BUILDING
C	CURB
CB	CATCH BASIN
CIPP	CURED IN PLACE PIPE
CI	CAST IRON
CL	CENTER LINE, OR CLASS CURB–LESS
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CP	CONTROL POINT
CS	COMBINED SEWER
CU	COPPER
D	DRAIN
DB	DUCT BANK
DEG	DEGREE
DEPT	DEPARTMENT
DH	DRILL HOLE
DI	DUCTILE IRON
DIA	DIAMETER
EL	ELEVATION
ELEC	ELECTRIC
EOB	END OF BORING
EX	EXISTING
FF	FINISHED FLOOR
FFE	FINISH FLOOR ELEVATION
FOC	FIBER OPTIC CABLE
G	GAS
GAR	GARAGE
GV	GATE VALVE
HC	HANDICAPPED
HDPE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
I	INVERT
INV	INVERT
L	LENGTH
MAX	MAXIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
MIN	MINIMUM
MW	MONITORING WELL
OC	ON CENTER
PE	POLYETHYLENE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
REQD	REQUIRED
S	SLOPE
SAN	SANITARY SEWER
SF	SQUARE FEET
STA	STATION
STM	STORM SEWER
SY	SQUARE YARD
T	TELEPHONE
TF	TOP OF FRAME
TP	TEST PIT
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE



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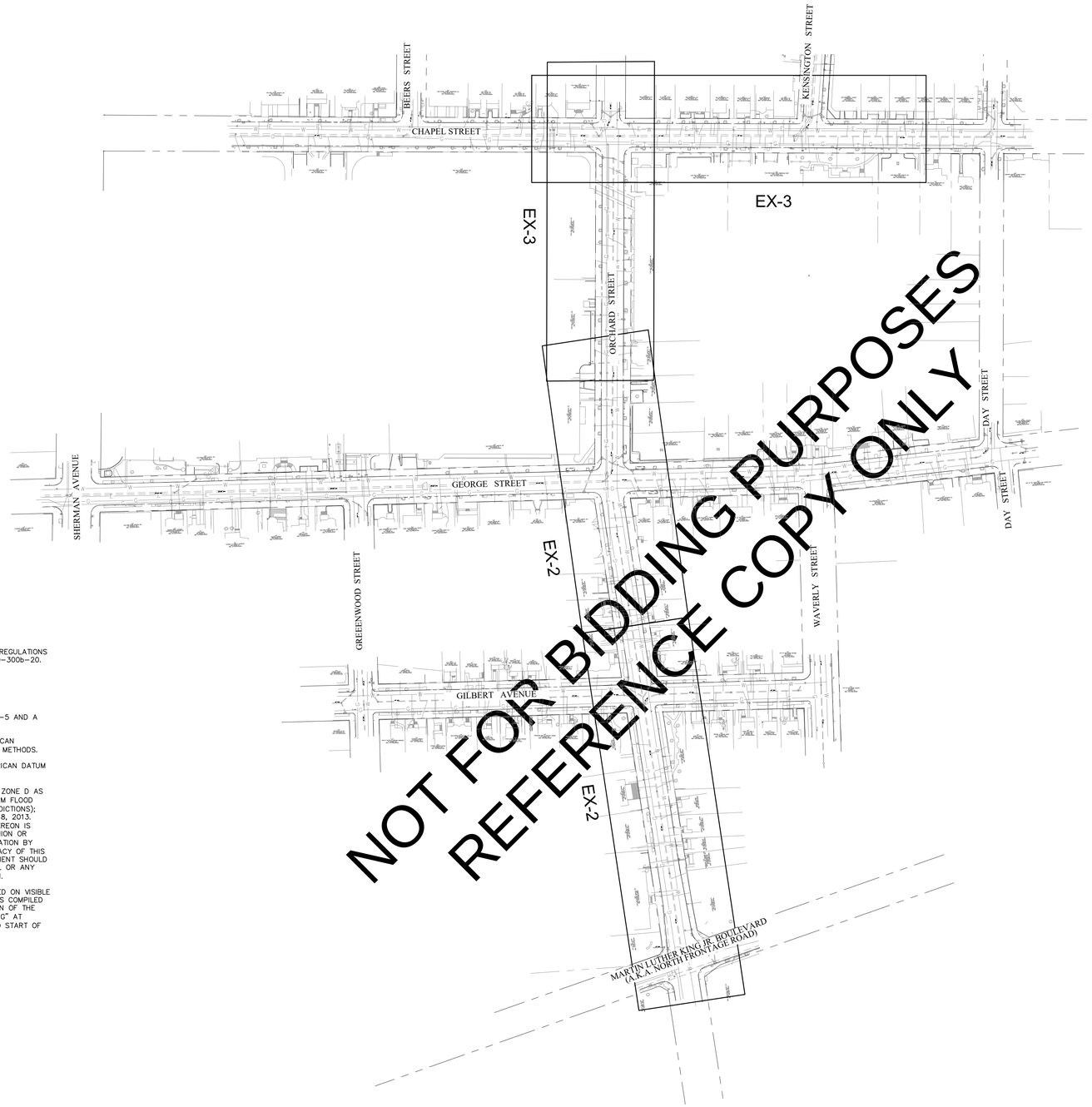
GENERAL NOTES

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 02



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LOCATION MAP
NOT TO SCALE

SURVEY NOTES:

1. THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20–300b–1 THROUGH 20–300b–20.
   A. THE TYPE OF SURVEY IS A TOPOGRAPHIC SURVEY.
   B. PROPERTY LINES DEPICTED DO NOT PRESENT A SURVEYOR'S PROPERTY/BOUNDARY OPINION.
   C. THIS SURVEY WAS PREPARED TO A VERTICAL ACCURACY CLASS V–5 AND A TOPOGRAPHIC ACCURACY CLASS T–2.
2. THE ELEVATIONS DEPICTED HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DEVELOPED USING GNSS SURVEY METHODS.
3. THE NORTH ARROW DEPICTED HEREON IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83) DEVELOPED USING GNSS SURVEY METHODS.
4. THE SUBJECT AREA APPEARS TO LIE WITHIN ZONE X (UNSHADED) OR ZONE D AS DEPICTED ON FEMA'S FLOOD INSURANCE RATE MAP (FIRM) TITLED: FIRM FLOOD INSURANCE RATE MAP NEW HAVEN COUNTY, CONNECTICUT (ALL JURISDICTIONS); PANEL 437 OF 635; MAP NUMBER 09009C0437J; MAP REVISED JULY 8, 2013. ANY FEMA FLOODPLAIN AND/OR FLOODWAY INFORMATION DEPICTED HEREON IS APPROXIMATE ONLY AND DOES NOT IN ANY WAY CONSTITUTE AN OPINION OR REPRESENTATION OF ACTUAL FLOODPLAIN AND/OR FLOODWAY INFORMATION BY PEREIRA ENGINEERING, LLC (PE). PE DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION, AND MAKES NO REPRESENTATIONS UPON WHICH THE CLIENT SHOULD RELY IN CONNECTION WITH THE FLOOD ZONE OF THE SUBJECT PARCEL OR ANY FEMA FLOODPLAIN AND/OR FLOODWAY INFORMATION DEPICTED HEREON.
5. UTILITY INFORMATION DEPICTED HEREON IS APPROXIMATE AND IS BASED ON VISIBLE EVIDENCE OF SURFACE AND OVERHEAD STRUCTURE LOCATIONS AND AS COMPILED FROM EXISTING RECORD MAPPING AVAILABLE DURING THE PREPARATION OF THE SURVEY. ALL CONTRACTORS SHOULD CONTACT "CALL BEFORE YOU DIG" AT 1(800)922–4455 FOR VERIFICATION OF UTILITY INFORMATION PRIOR TO START OF ANY WORK.

To my knowledge and belief, this map is substantially correct as noted hereon.

Jeffrey R. Jurzynski, Conn. Land Surveyor # LSX.0014202

LEGEND

— — —	PROPERTY LINE	—650—	CONTOURS
— — —	RIGHT OF WAY	X 621.5	SPOT ELEVATION
— — —	EASEMENT LINE		CONIFEROUS TREE
· · · · ·	STONE WALL		DECIDUOUS TREE
	STRUCTURE		BUSH
	EDGE OF PAVEMENT	—o—o—o—	CHAIN LINK FENCE
	TEST BORING	—o—o—o—	WOOD FENCE
	CATCH BASIN		GUIDERAIL
	STORM MANHOLE		LIGHT POLE
	SANITARY MANHOLE		UTILITY POLE
	ELECTRIC MANHOLE		HYDRANT
	MANHOLE (UNKNOWN)		WATER VALVE
—W—	WATER		GAS VALVE
—G—	GAS		MONUMENT FOUND
—E—	ELECTRIC		IRON PIPE OR PIN FOUND
—T—	TELEPHONE		DRILL HOLE FOUND
—FO—	FIBER OPTIC LINE		
—OHW—	OVERHEAD WIRES		

100 0 100 200
SCALE: 1" = 100'

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EXISTING CONDITIONS SURVEY

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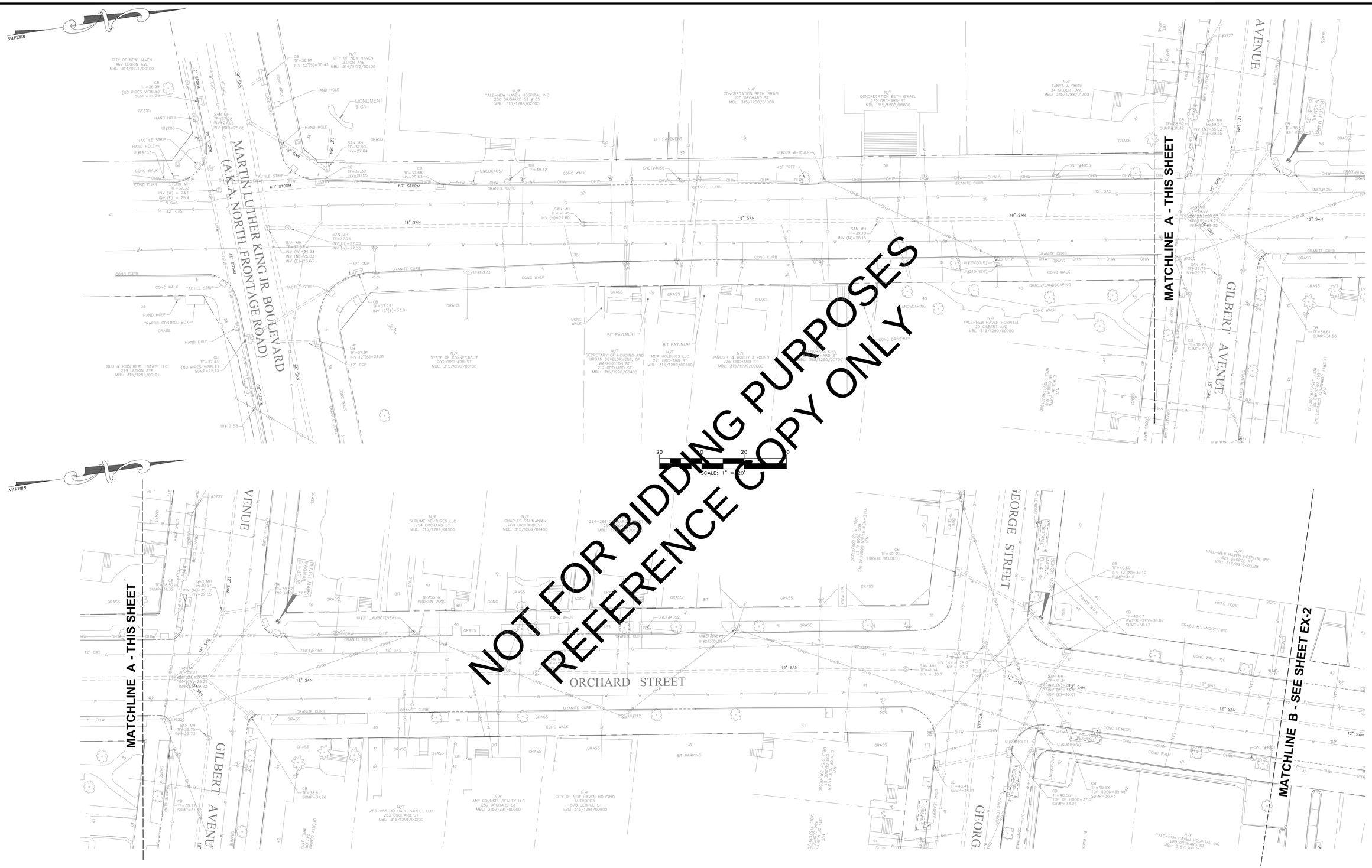
FILE NAME:
SHEET NO.
03



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EXISTING CONDITIONS
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
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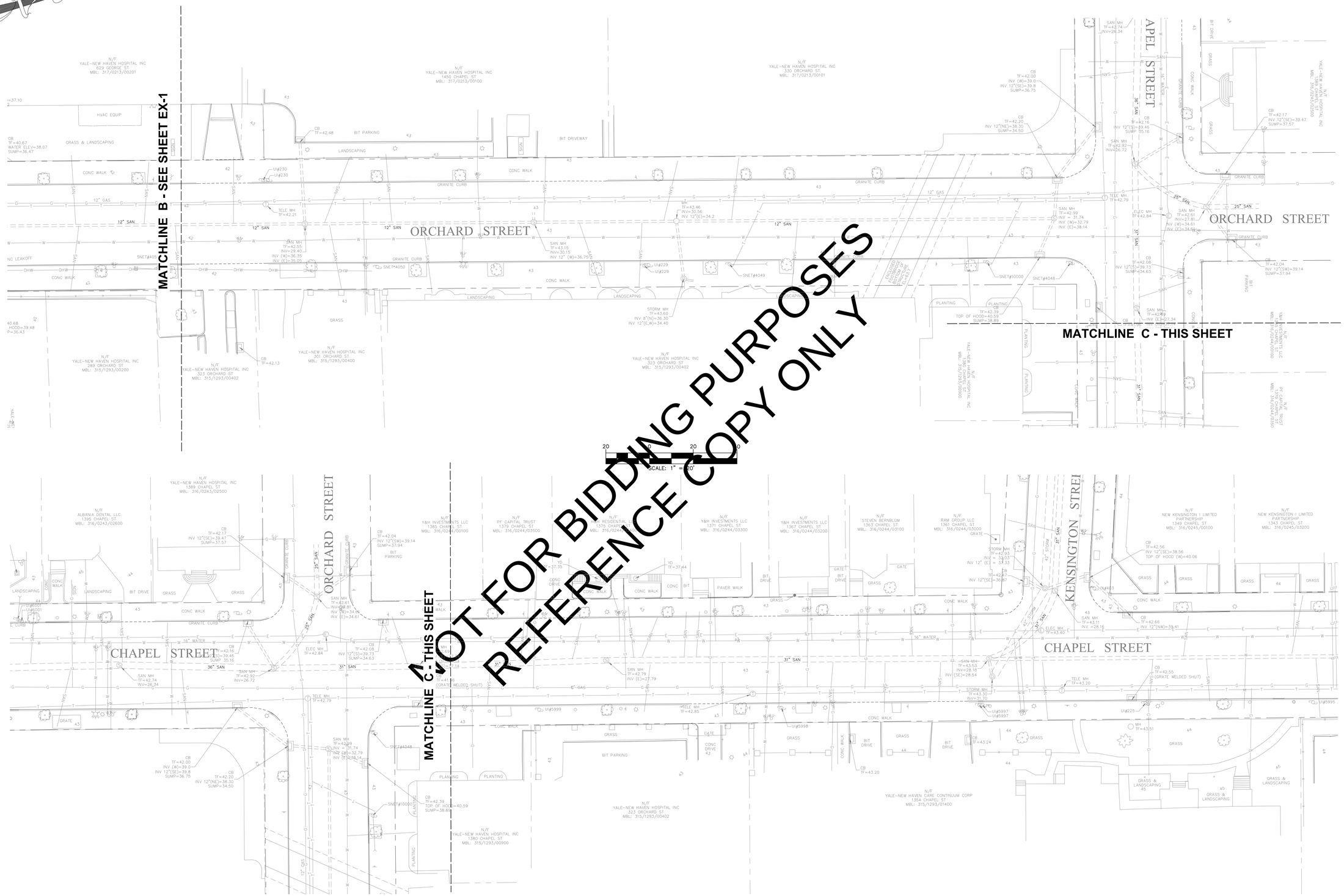

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EXISTING CONDITIONS
ORCHARD STREET
CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO.
05

NOTE:
PIPE REMOVAL/CB REMOVAL WITHIN TRENCH EXC. LIMITS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE ITEM TRENCH EXCAVATION

DEMOLITION LEGEND

- ABANDON SANITARY LATERAL
- ABANDON STORM DRAIN

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DEMOLITION PLAN ORCHARD STREET

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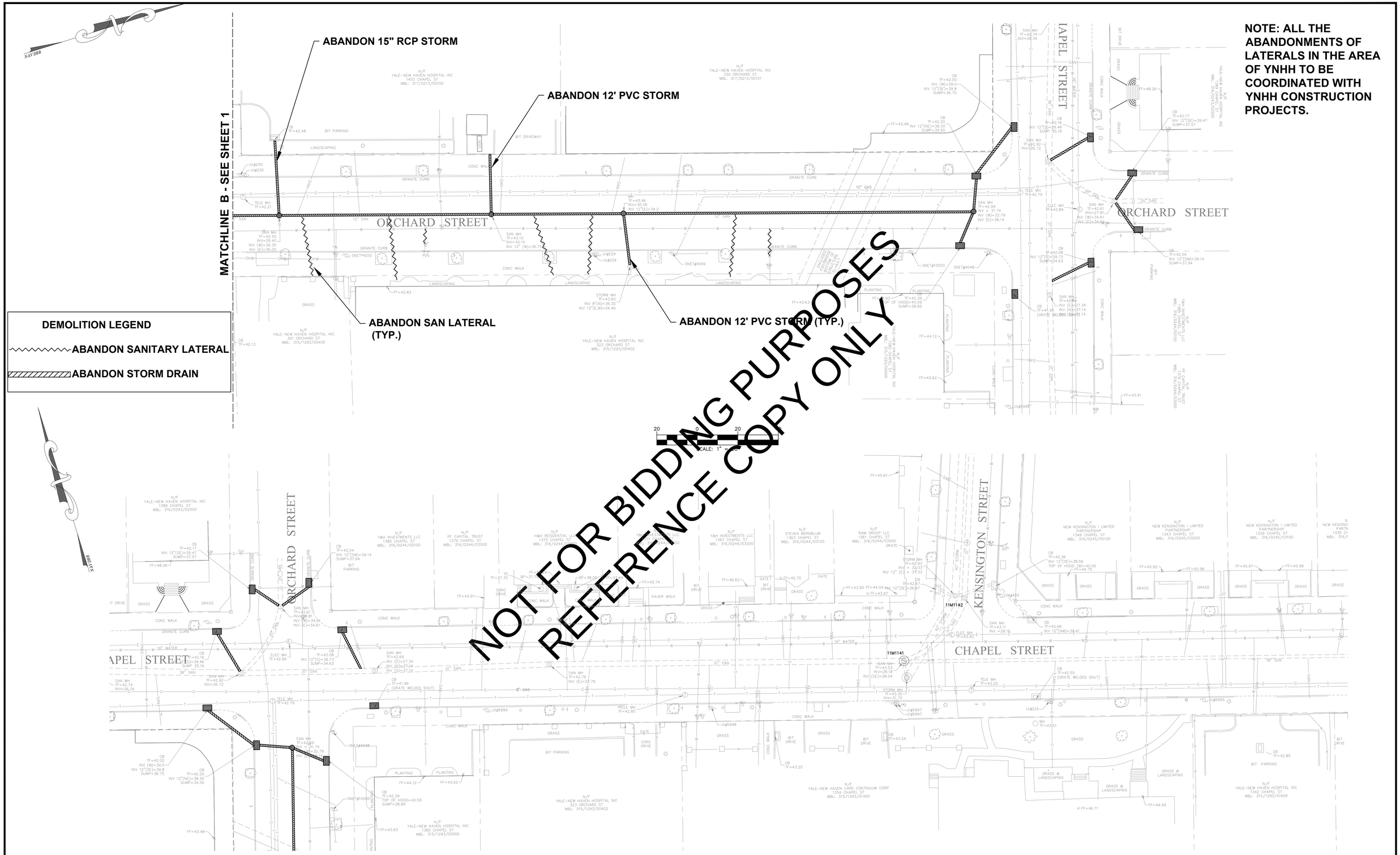

NOTE: ALL THE ABANDONMENTS OF LATERALS IN THE AREA OF YNHH TO BE COORDINATED WITH YNHH CONSTRUCTION PROJECTS.

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DEMOLITION PLAN ORCHARD STREET CHAPEL STREET

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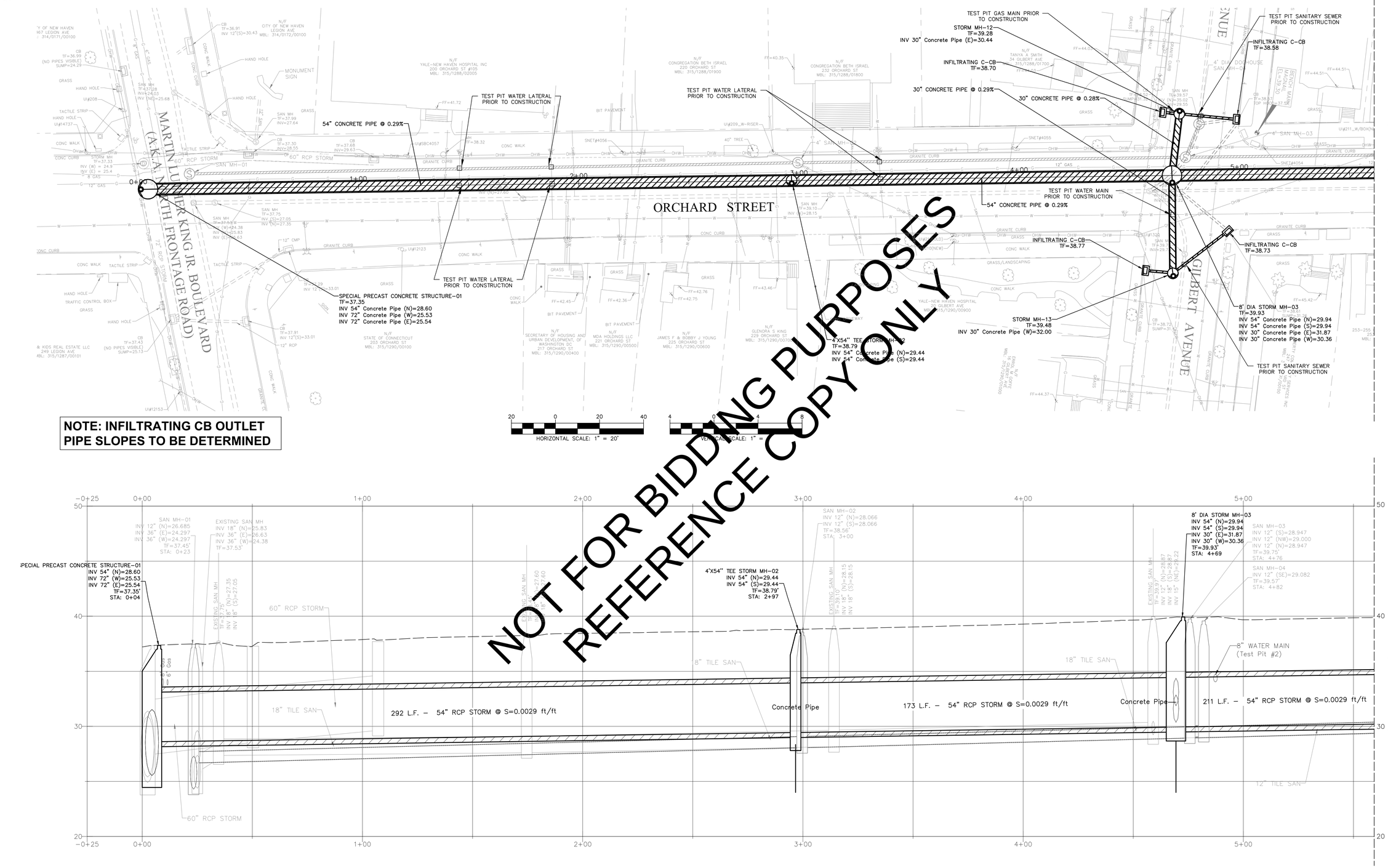

NOTE: INFILTRATING CB OUTLET PIPE SLOPES TO BE DETERMINED

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STORM PLAN AND PROFILE ORCHARD STREET

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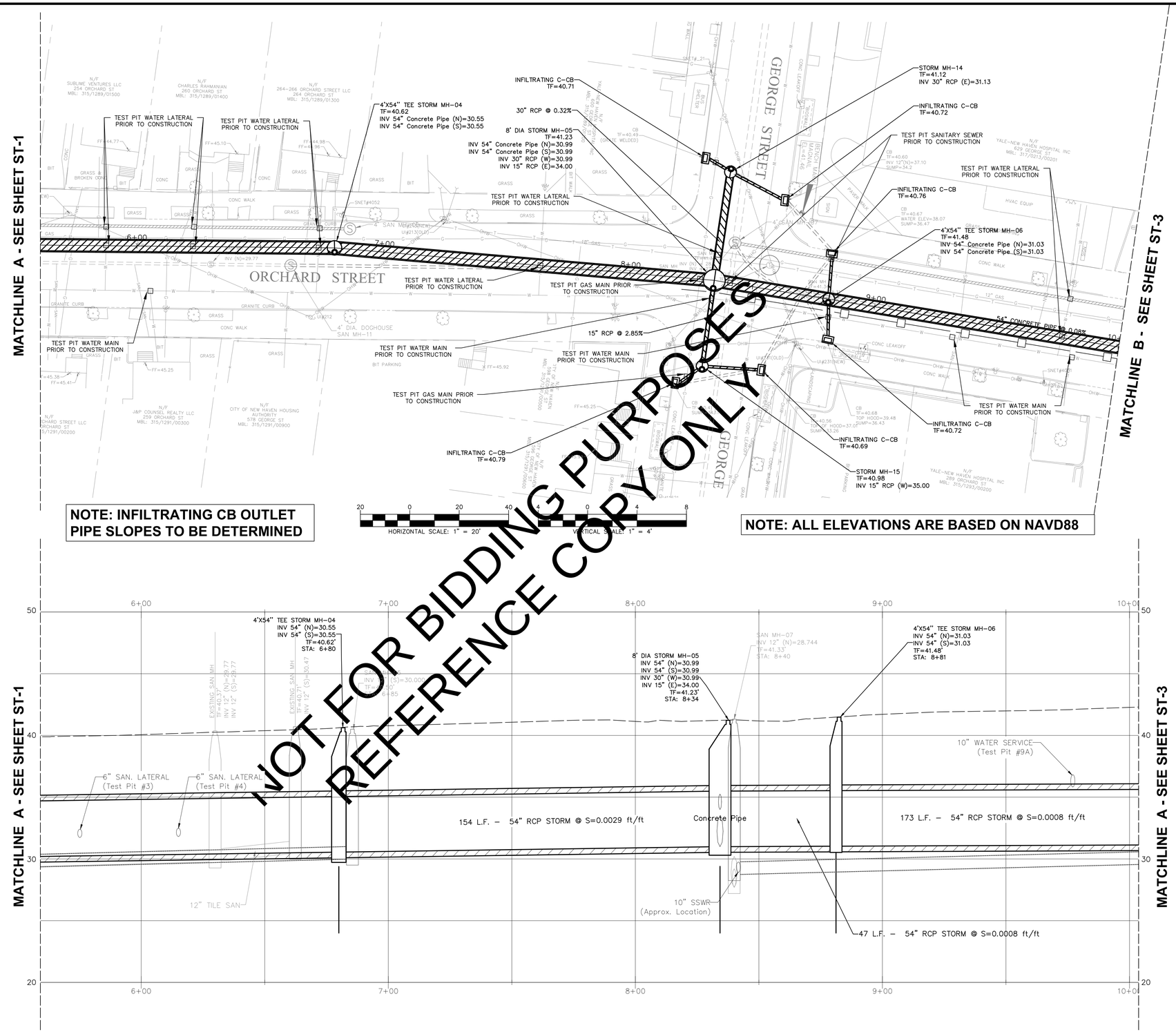

NOTE: INFILTRATING CB OUTLET PIPE SLOPES TO BE DETERMINED

NOTE: ALL ELEVATIONS ARE BASED ON NAVD88

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STORM PLAN AND PROFILE
ORCHARD STREET

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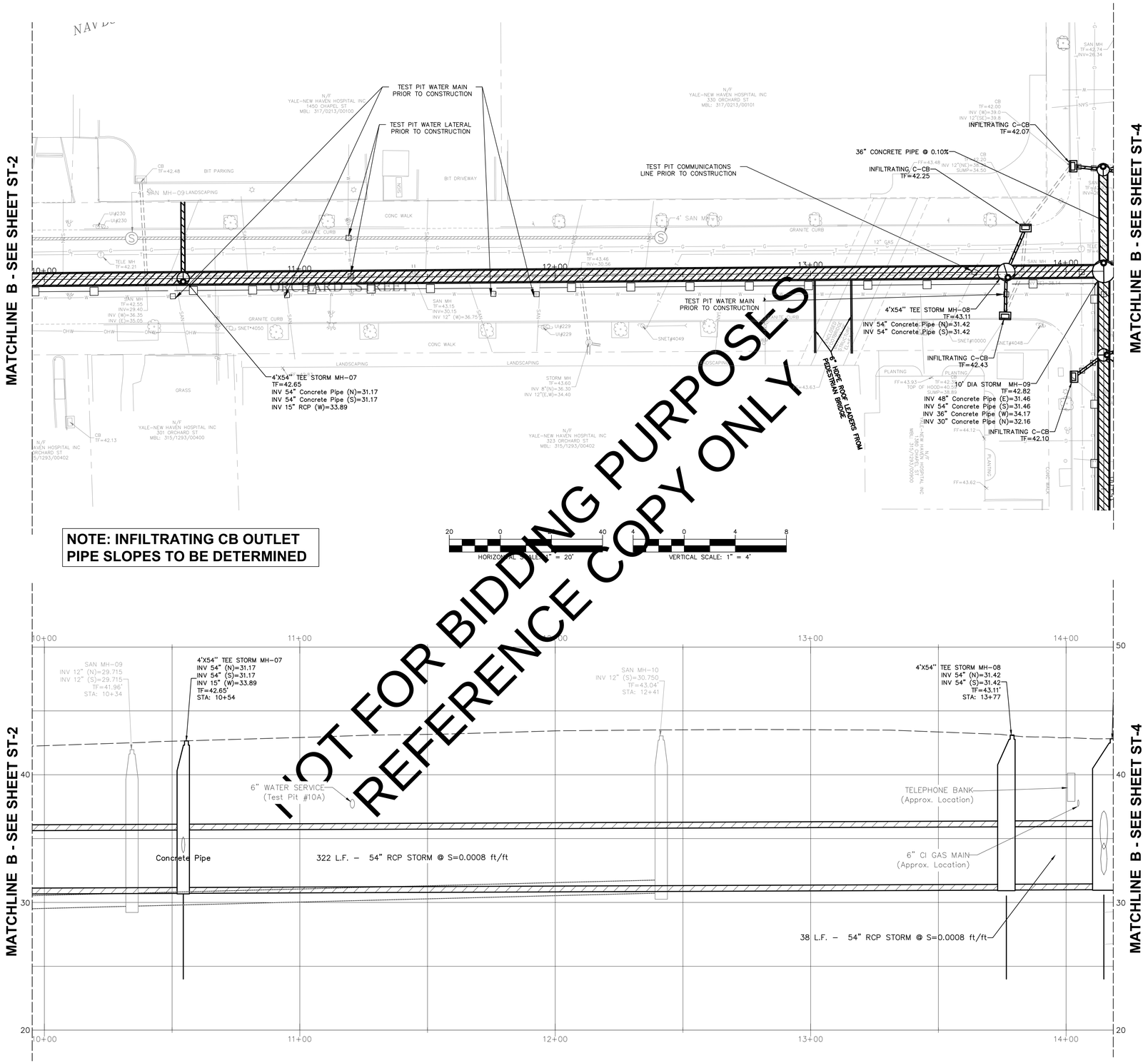

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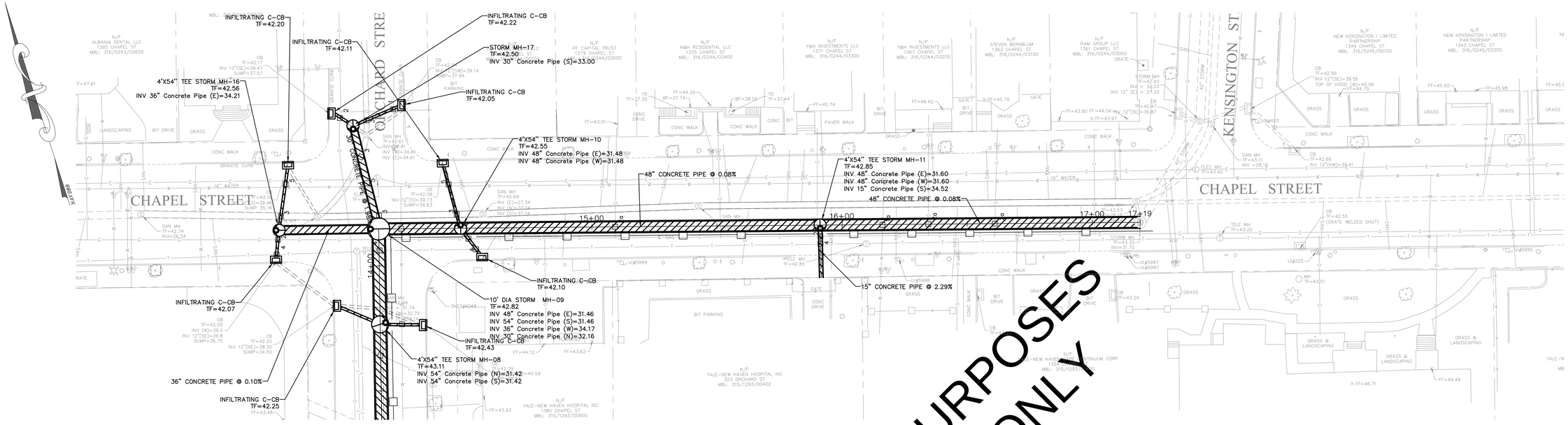
STORM PLAN AND PROFILE ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 10



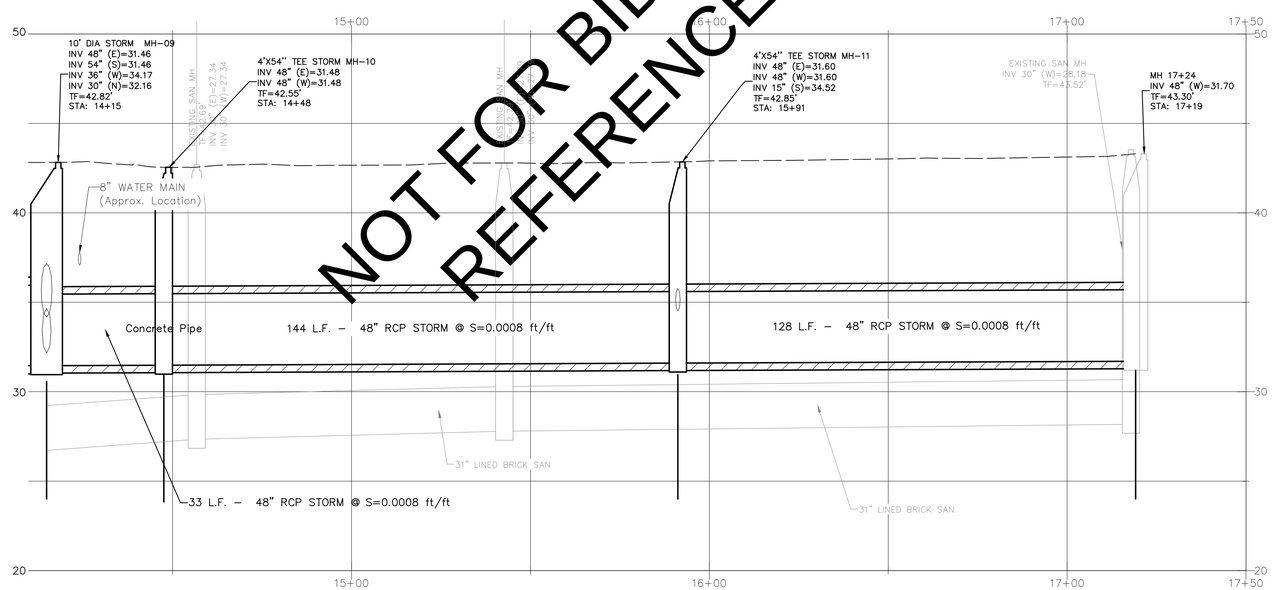
TEST PIT KEY

1:	TEST PIT WATER LINE PRIOR TO CONSTRUCTION
1a:	TEST PIT WATER LATERAL PRIOR TO CONSTRUCTION
2:	TEST PIT GAS LINE PRIOR TO CONSTRUCTION
2a:	TEST PIT GAS LATERAL PRIOR TO CONSTRUCTION
3:	TEST PIT SANITARY SEWER PRIOR TO CONSTRUCTION
3a:	TEST PIT SANITARY LATERAL PRIOR TO CONSTRUCTION
4:	TEST PIT COMMUNICATION LINE PRIOR TO CONSTRUCTION
5:	TEST PIT WATER & ELECTRIC LINE PRIOR TO CONSTRUCTION

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

4 0 4 8
VERTICAL SCALE: 1" = 4'

NOTE: INFILTRATING CB OUTLET PIPE SLOPES TO BE DETERMINED



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REFERENCE COPY ONLY

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SEWER SEPARATION PROJECT

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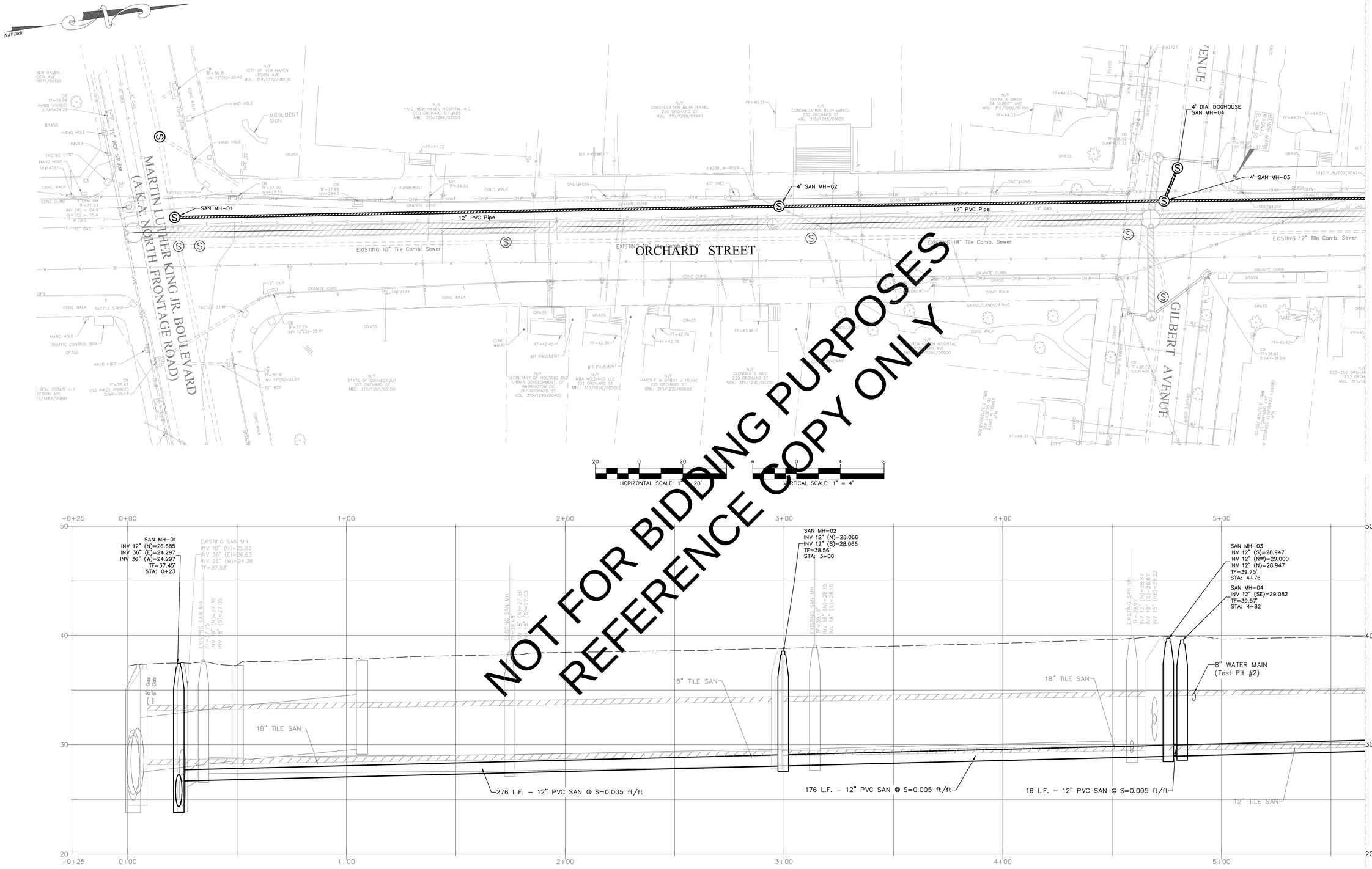
STORM PLAN AND PROFILE
CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 11



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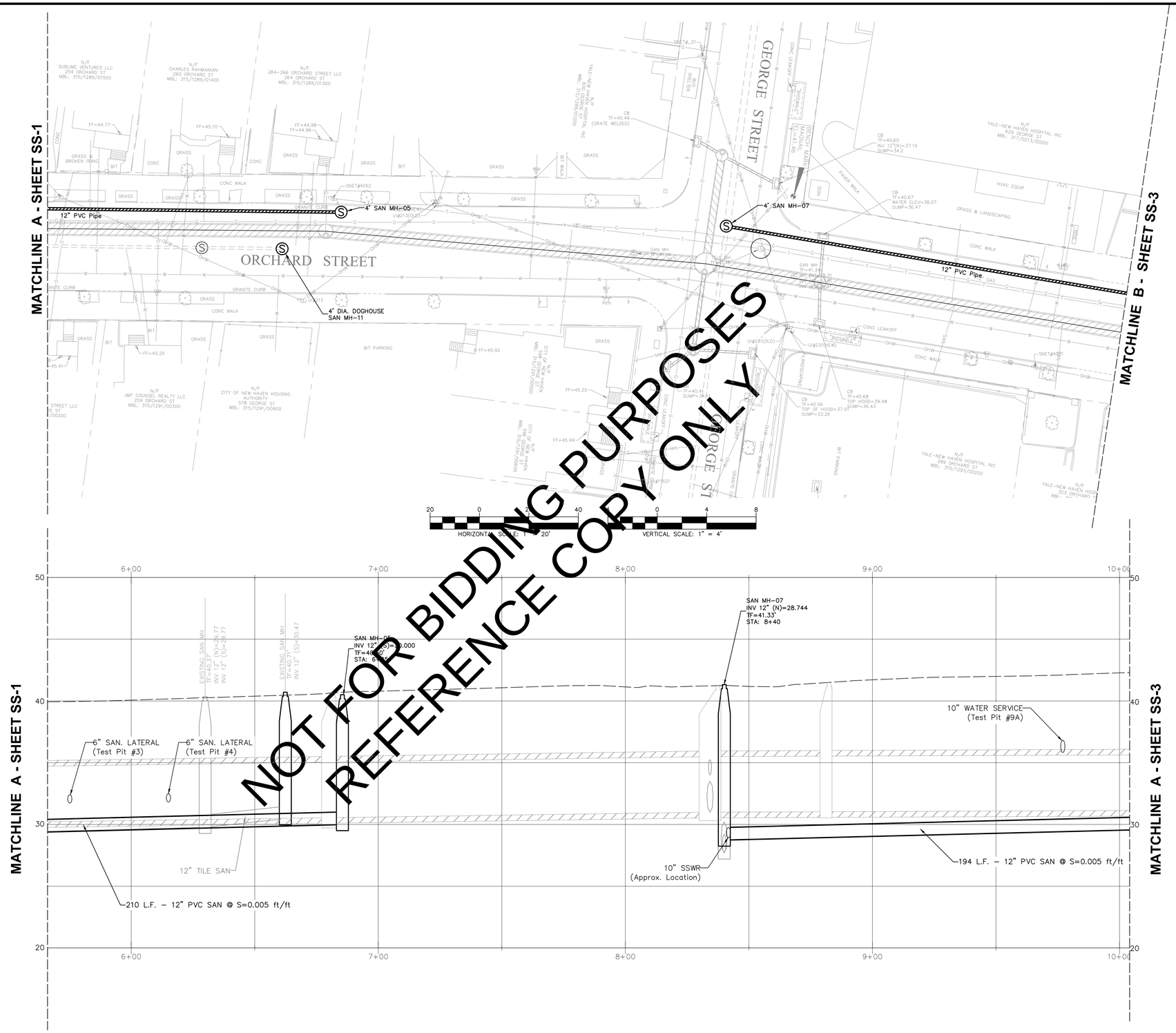
SAN. SEWER PLAN AND PROFILE
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 12



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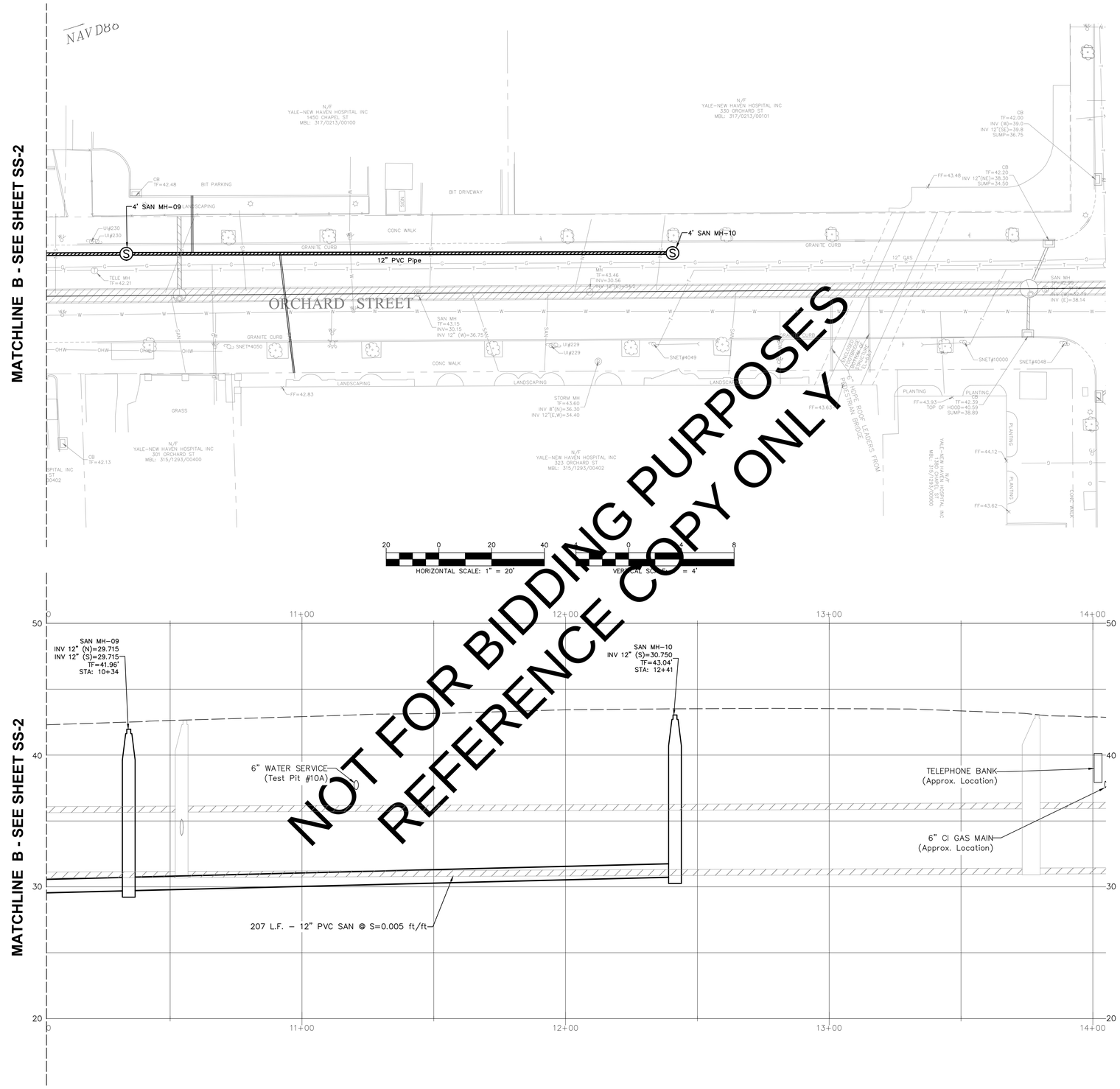
ORCHARD STREET
SAN. SEWER PLAN AND PROFILE

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO.
13



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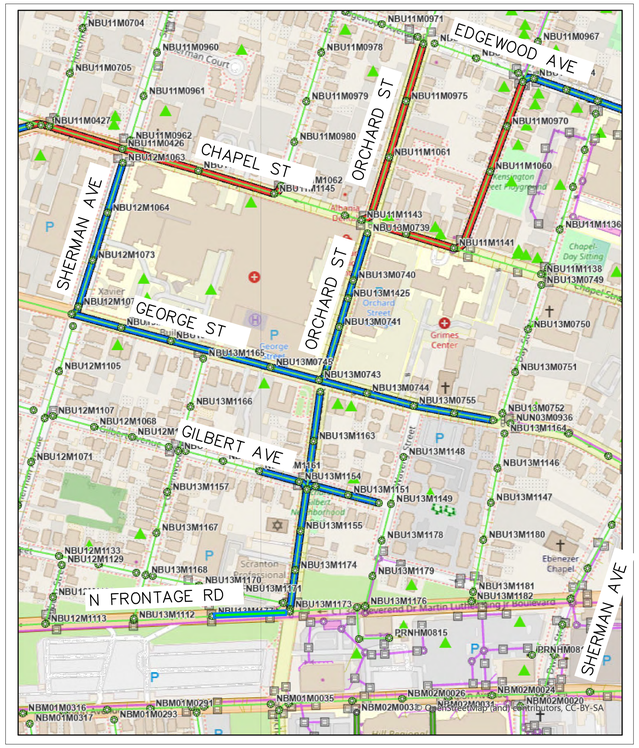
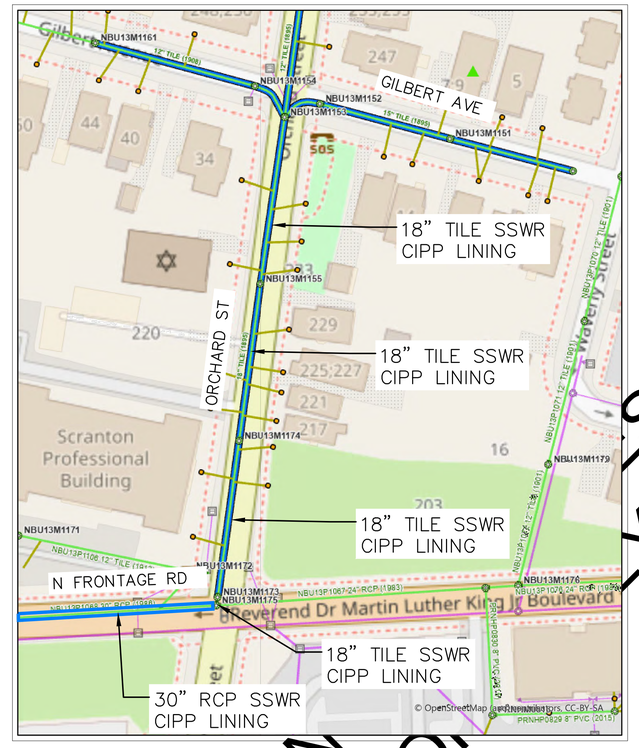
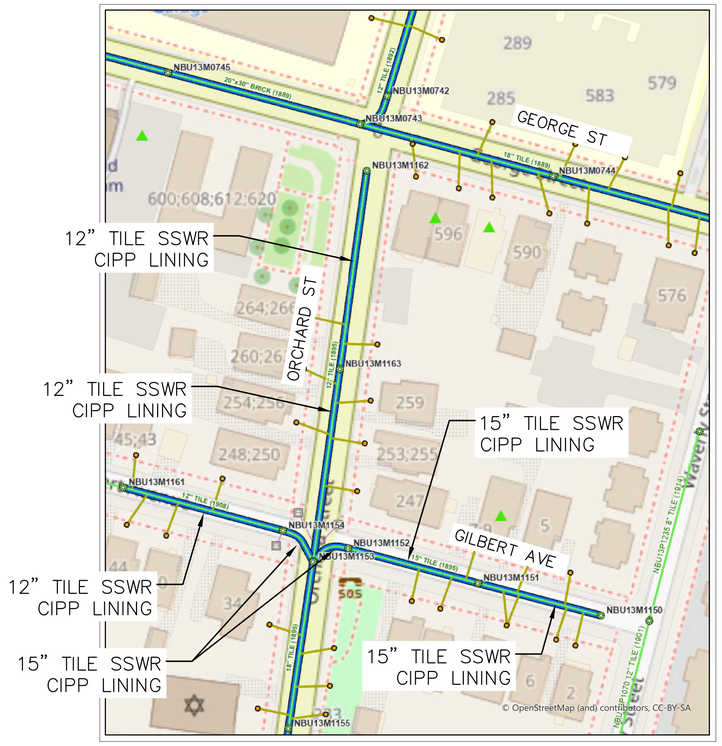
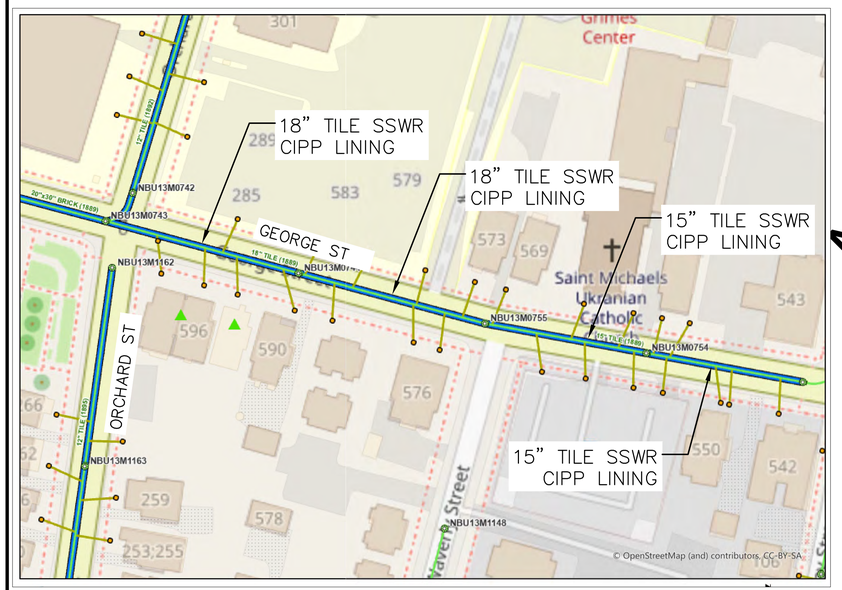
ORCHARD STREET
SAN. SEWER PLAN AND PROFILE

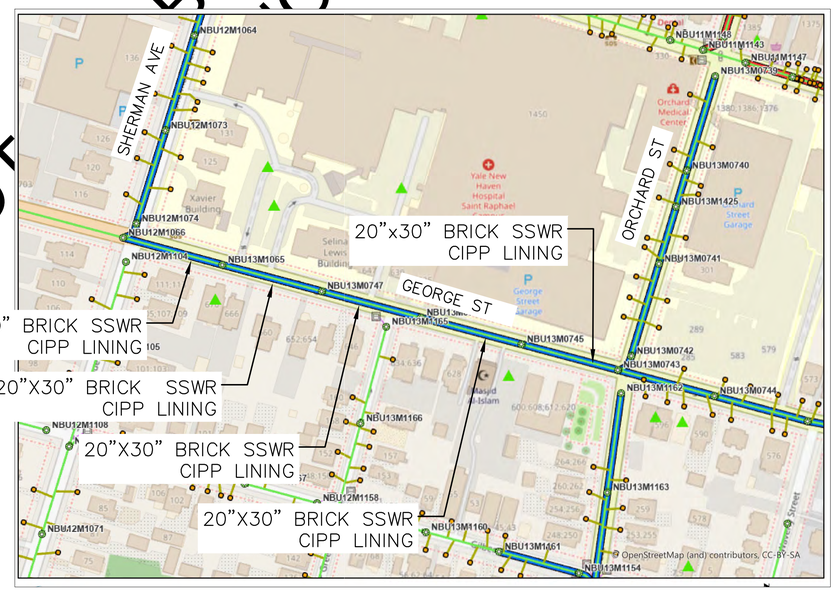
PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 14

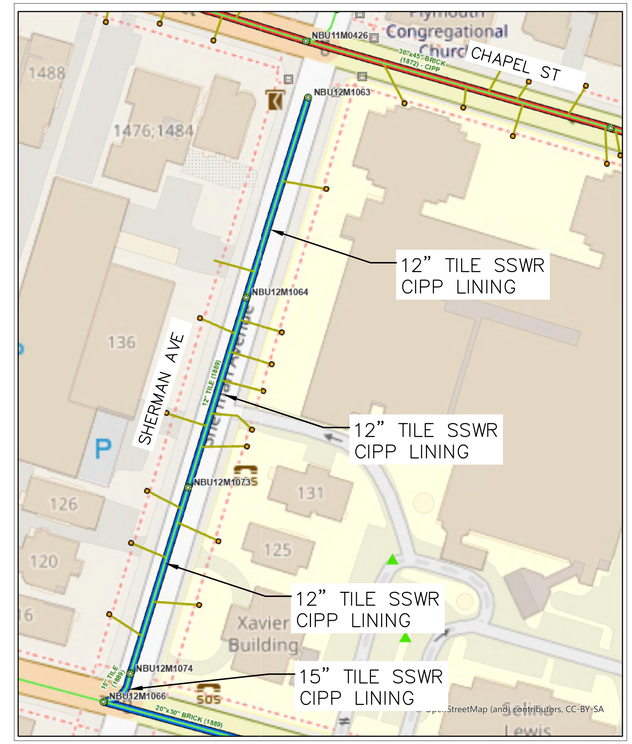












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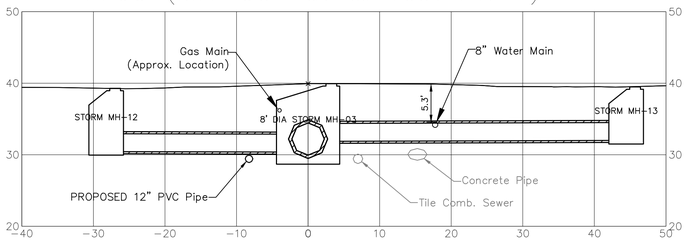
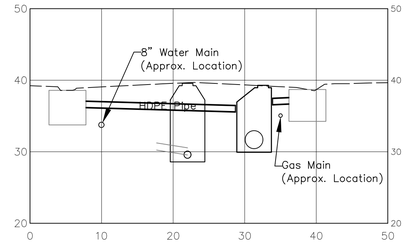
CURED-IN-PLACE-PIPE LINING

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 15

4+69 (MH–03 Lat & Test Pit 2)

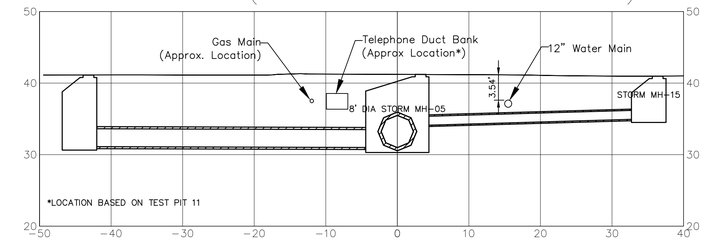


MH–13 Lat (Gilbert Ave)

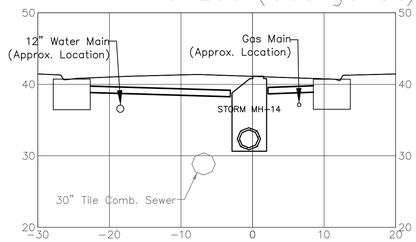


MH–14 (Gilbert Ave)

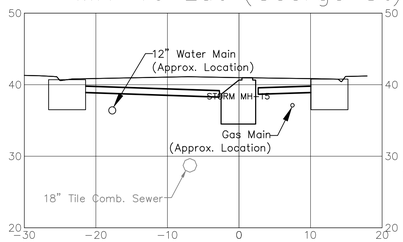
8+32 (MH–05 Lat & Test Pit 19)



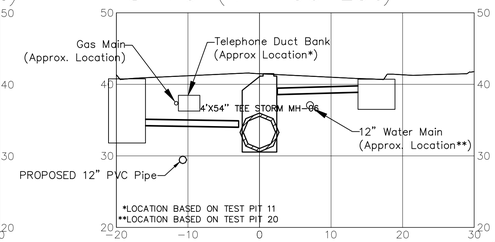
MH–15 Lat (George St)



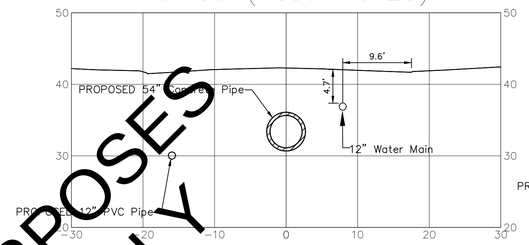
MH–16 Lat (George St)



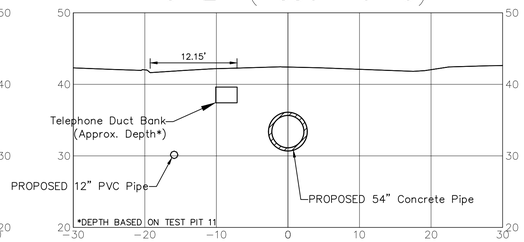
8+79 (MH–06 Lat)



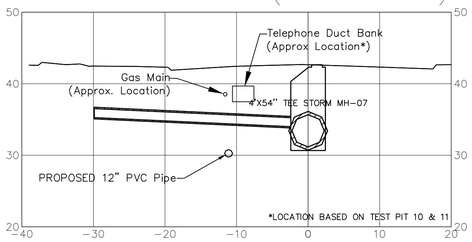
10+00 (Test Pit 20)



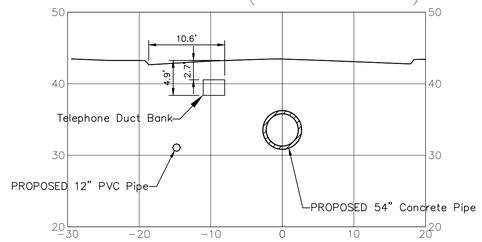
10+21 (Test Pit 10)



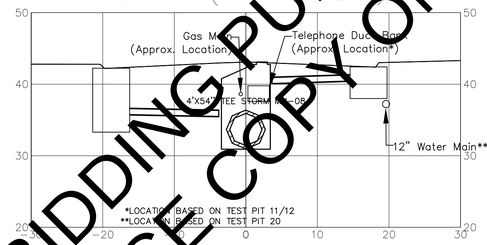
10+54 (MH–07 Lat)



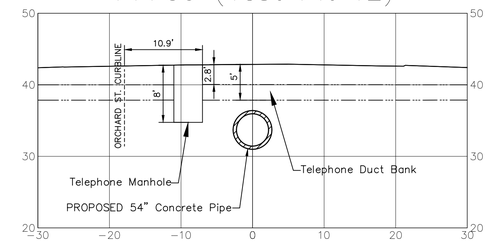
12+05 (Test Pit 11)



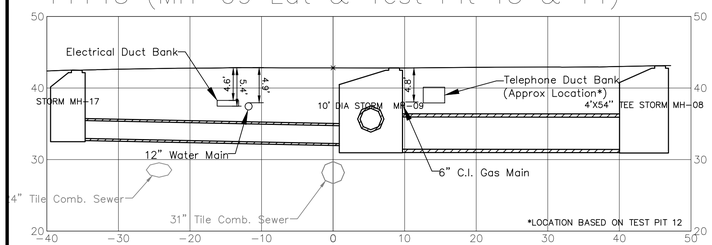
13+76 (MH–08 Lat)



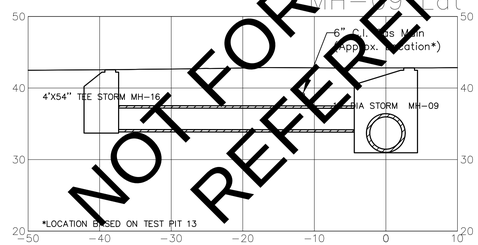
14+06 (Test Pit 12)



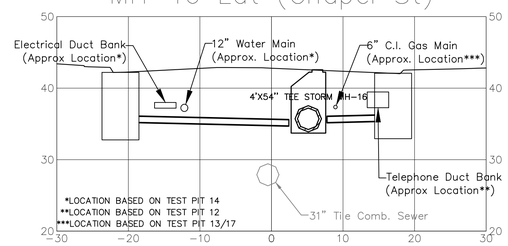
14+15 (MH–09 Lat & Test Pit 13 & 14)



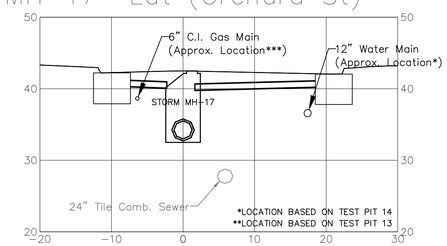
MH–09 Lat



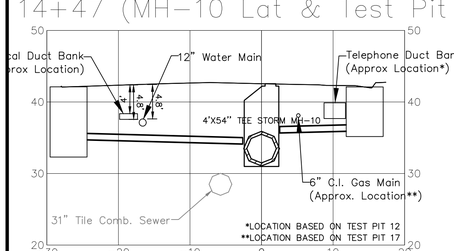
MH–16 Lat (Chapel St)



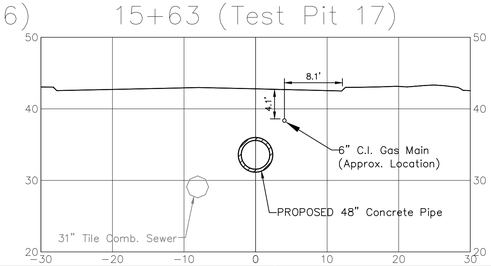
MH–17 Lat (Orchard St)



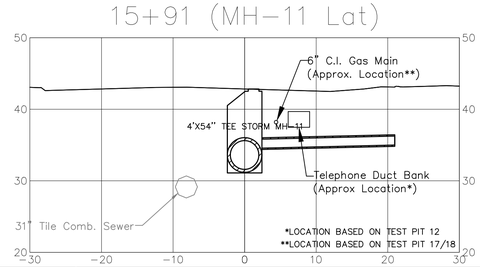
14+47 (MH–10 Lat & Test Pit 16)



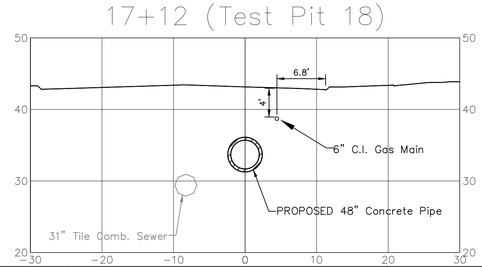
15+63 (Test Pit 17)



15+91 (MH–11 Lat)



17+12 (Test Pit 18)



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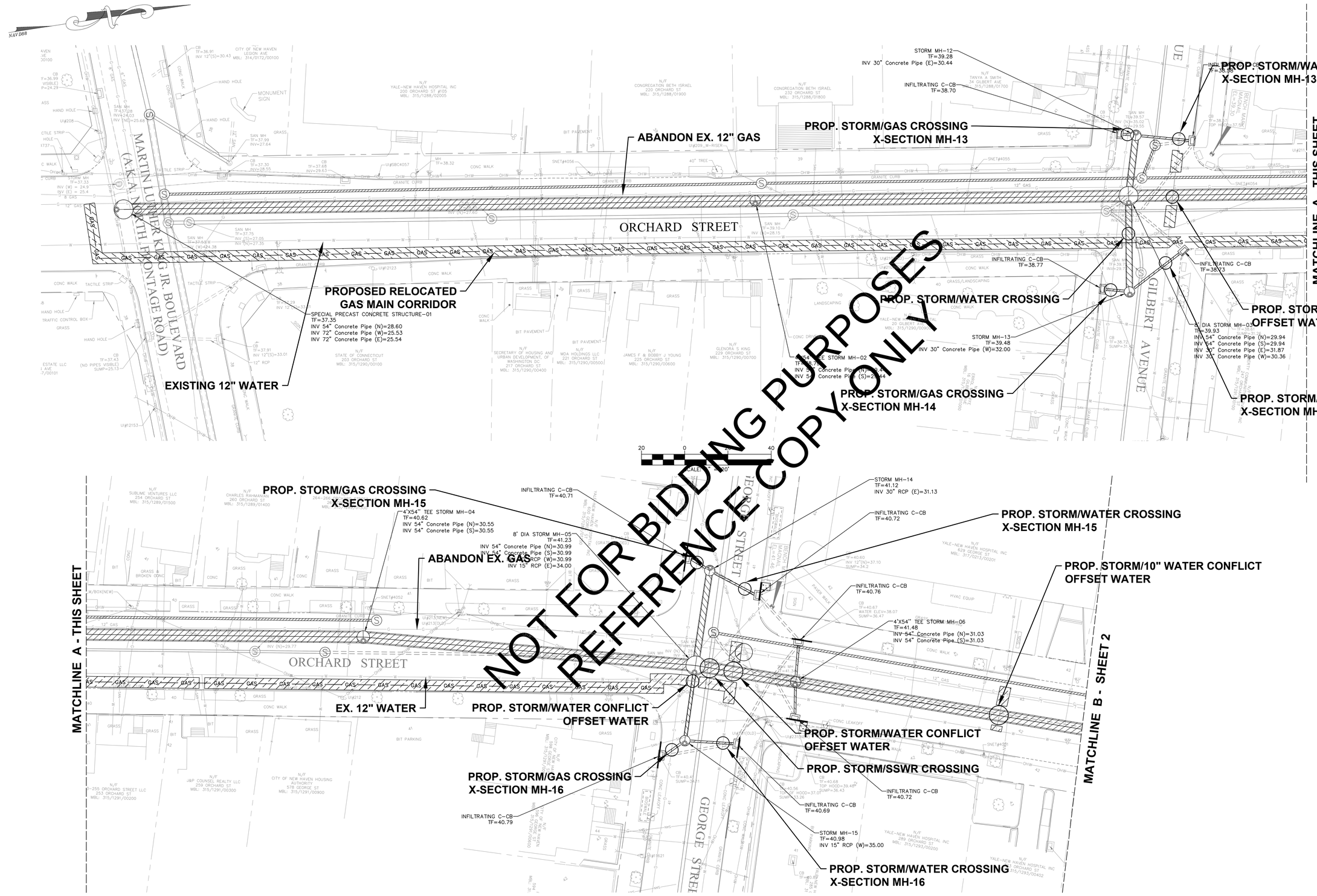
CROSS SECTIONS

PROJECT NO. CWF 2019–05
FILE NAME:

SHEET NO.
16



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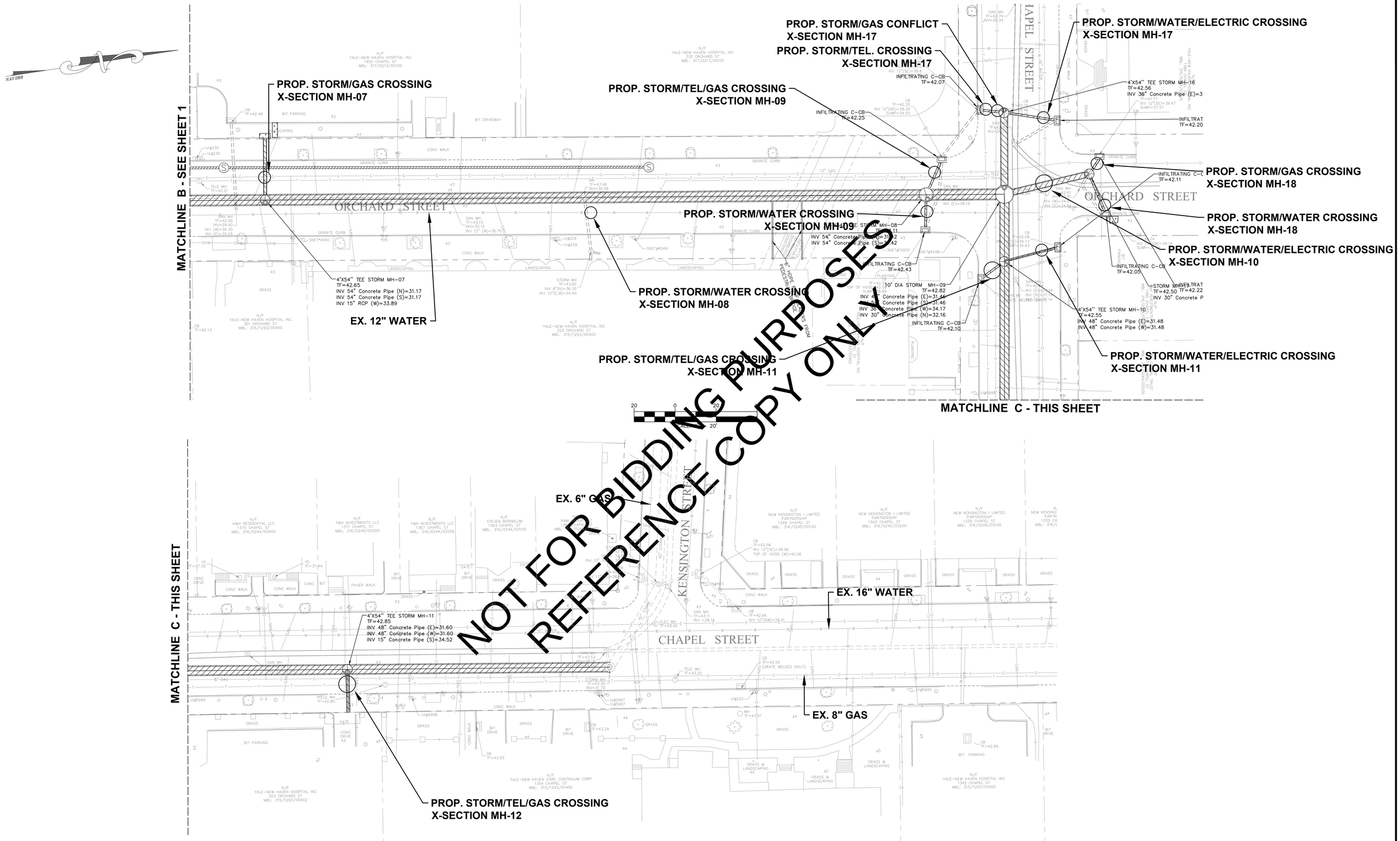
UTILITY RESTORATION
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO.
17



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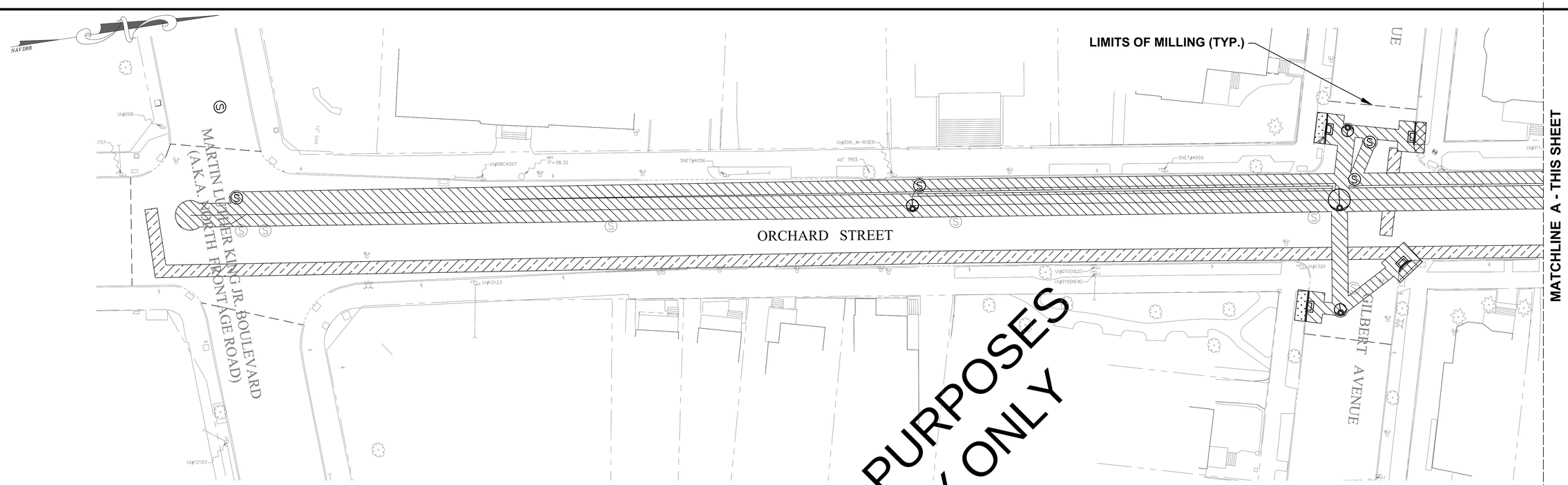
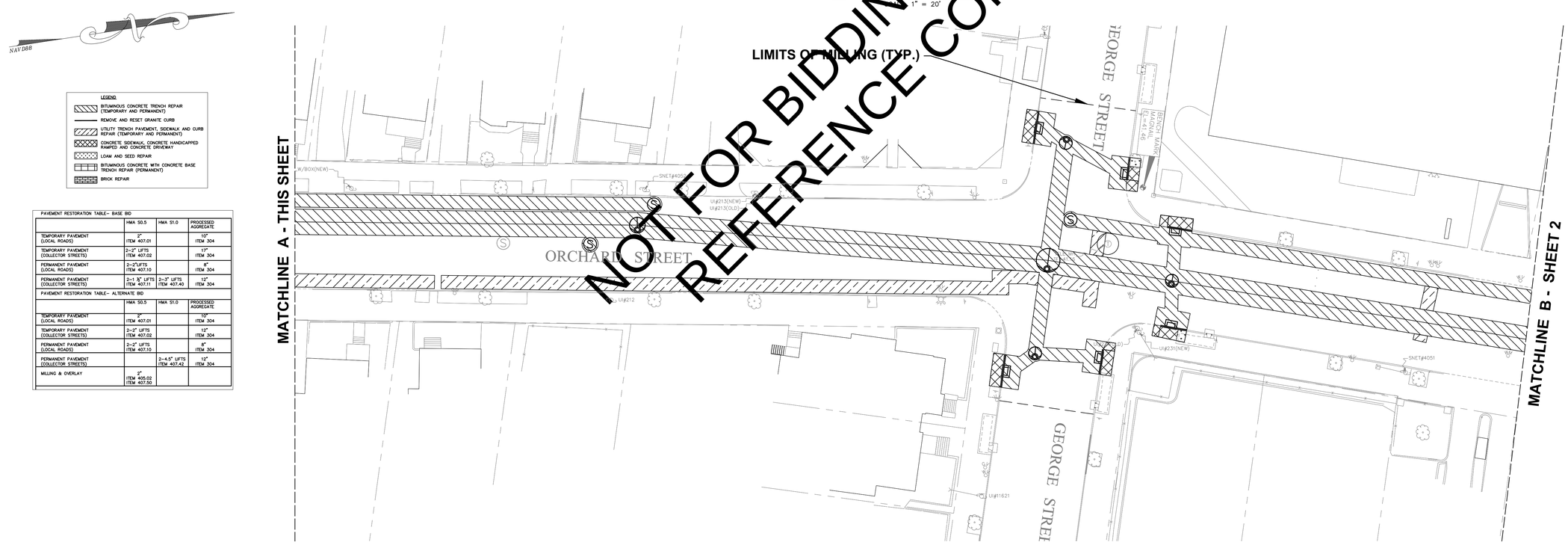
UTILITY RESTORATION
ORCHARD STREET
CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO.
18





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LEGEND

- BITUMINOUS CONCRETE TRENCH REPAIR (TEMPORARY AND PERMANENT)
- REMOVE AND RESET GRANITE CURB
- UTILITY TRENCH PAVEMENT, SIDEWALK AND CURB REPAIR (TEMPORARY AND PERMANENT)
- CONCRETE SIDEWALK, CONCRETE HANDICAPPED RAMPED AND CONCRETE DRIVEWAY
- LOAM AND SEED REPAIR
- BITUMINOUS CONCRETE WITH CONCRETE BASE TRENCH REPAIR (PERMANENT)
- BRICK REPAIR

PAVEMENT RESTORATION TABLE– BASE BID

	HMA S0.5	HMA S1.0	PROCESSED AGGREGATE
TEMPORARY PAVEMENT (LOCAL ROADS)	2" ITEM 407.01		10" ITEM 304
TEMPORARY PAVEMENT (COLLECTOR STREETS)	2–2" LIFTS ITEM 407.02		17" ITEM 304
PERMANENT PAVEMENT (LOCAL ROADS)	2–2"LIFTS ITEM 407.10		8" ITEM 304
PERMANENT PAVEMENT (COLLECTOR STREETS)	2–1 ½" LIFTS ITEM 407.11	2–3" LIFTS ITEM 407.40	12" ITEM 304

PAVEMENT RESTORATION TABLE– ALTERNATE BID

	HMA S0.5	HMA S1.0	PROCESSED AGGREGATE
TEMPORARY PAVEMENT (LOCAL ROADS)	2" ITEM 407.01		10" ITEM 304
TEMPORARY PAVEMENT (COLLECTOR STREETS)	2–2" LIFTS ITEM 407.02		12" ITEM 304
PERMANENT PAVEMENT (LOCAL ROADS)	2–2" LIFTS ITEM 407.10		8" ITEM 304
PERMANENT PAVEMENT (COLLECTOR STREETS)		2–4.5" LIFTS ITEM 407.42	12" ITEM 304
MILLING & OVERLAY	2" ITEM 405.02 ITEM 407.50		

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GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY

ORCHARD STREET AREA SEWER SEPARATION PROJECT

DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 WHITNEY AVENUE
HAMDEN CT 06518
203 239 4200 203 234 7376 FAX

RESTORATION PLAN ORCHARD STREET

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 19

LEGEND:

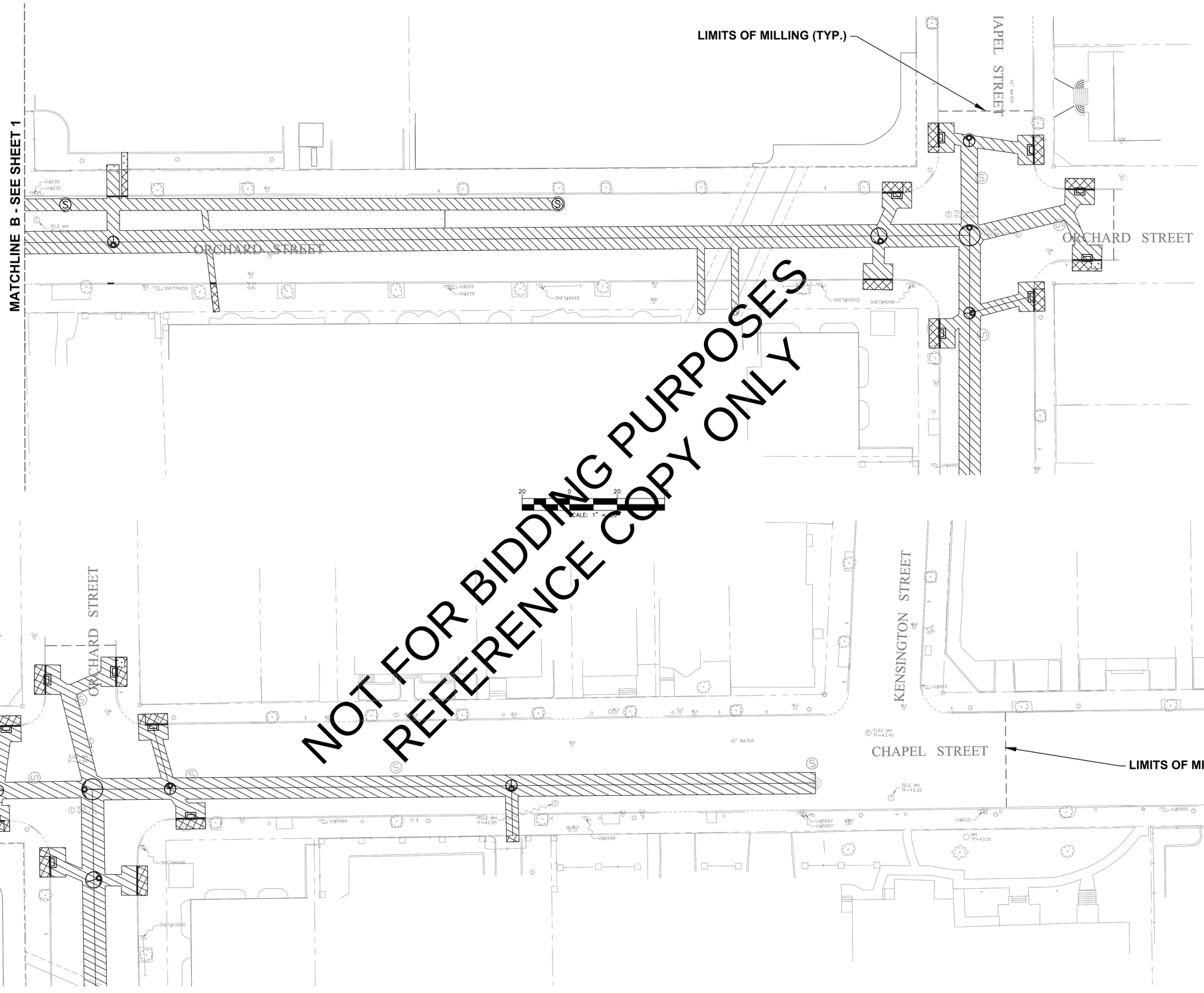
- BITUMINOUS CONCRETE TRENCH REPAIR (TEMPORARY AND PERMANENT)
- REMOVE AND RESET GRANITE CURB
- UTILITY TRENCH PAVEMENT, SIDEWALK AND CURB REPAIR (TEMPORARY AND PERMANENT)
- CONCRETE SIDEWALK, CONCRETE HANDICAPPED RAMPED AND CONCRETE DRIVEWAY
- LOAM AND SEED REPAIR
- BITUMINOUS CONCRETE WITH CONCRETE BASE TRENCH REPAIR (PERMANENT)
- BRICK REPAIR

PAVEMENT RESTORATION TABLE– BASE BID

	HMA S0.5	HMA S1.0	PROCESSED AGGREGATE
TEMPORARY PAVEMENT (LOCAL ROADS)	2" ITEM 407.01		10" ITEM 304
TEMPORARY PAVEMENT (COLLECTOR STREETS)	2–2" LIFTS ITEM 407.02		17" ITEM 304
PERMANENT PAVEMENT (LOCAL ROADS)	2–2"LIFTS ITEM 407.10		8" ITEM 304
PERMANENT PAVEMENT (COLLECTOR STREETS)	2–1 ½" LIFTS ITEM 407.11	2–3" LIFTS ITEM 407.40	12" ITEM 304

PAVEMENT RESTORATION TABLE– ALTERNATE BID

	HMA S0.5	HMA S1.0	PROCESSED AGGREGATE
TEMPORARY PAVEMENT (LOCAL ROADS)	2" ITEM 407.01		10" ITEM 304
TEMPORARY PAVEMENT (COLLECTOR STREETS)	2–2" LIFTS ITEM 407.02		12" ITEM 304
PERMANENT PAVEMENT (LOCAL ROADS)	2–2" LIFTS ITEM 407.10		8" ITEM 304
PERMANENT PAVEMENT (COLLECTOR STREETS)		2–4.5" LIFTS ITEM 407.42	12" ITEM 304
MILLING & OVERLAY	2" ITEM 405.02 ITEM 407.50		



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

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SEWER SEPARATION PROJECT

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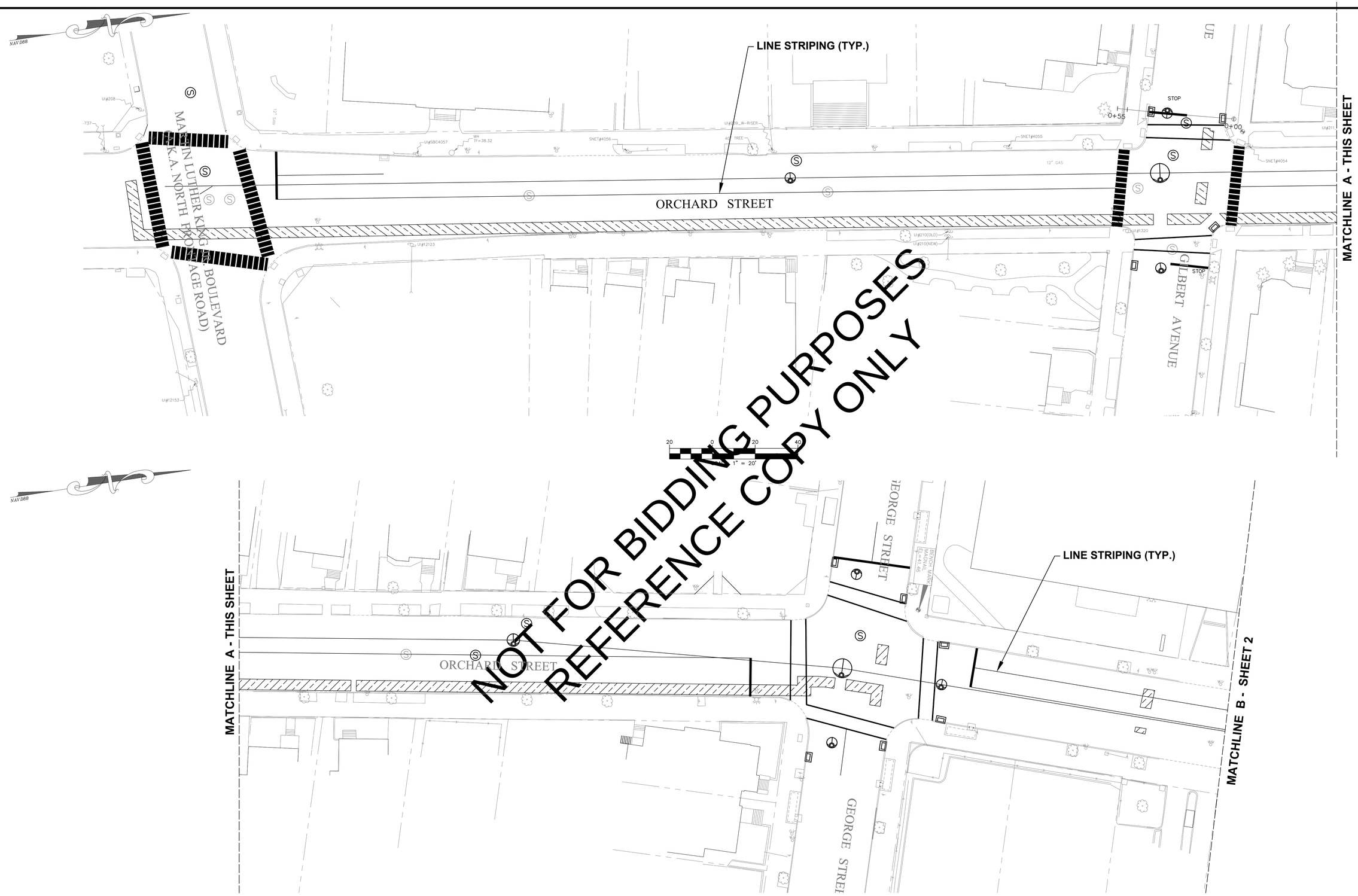
RESTORATION PLAN
ORCHARD STREET
CHAPEL STREET

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 20



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CROSS CHK'D BY:
APPROVED BY:
DATE:

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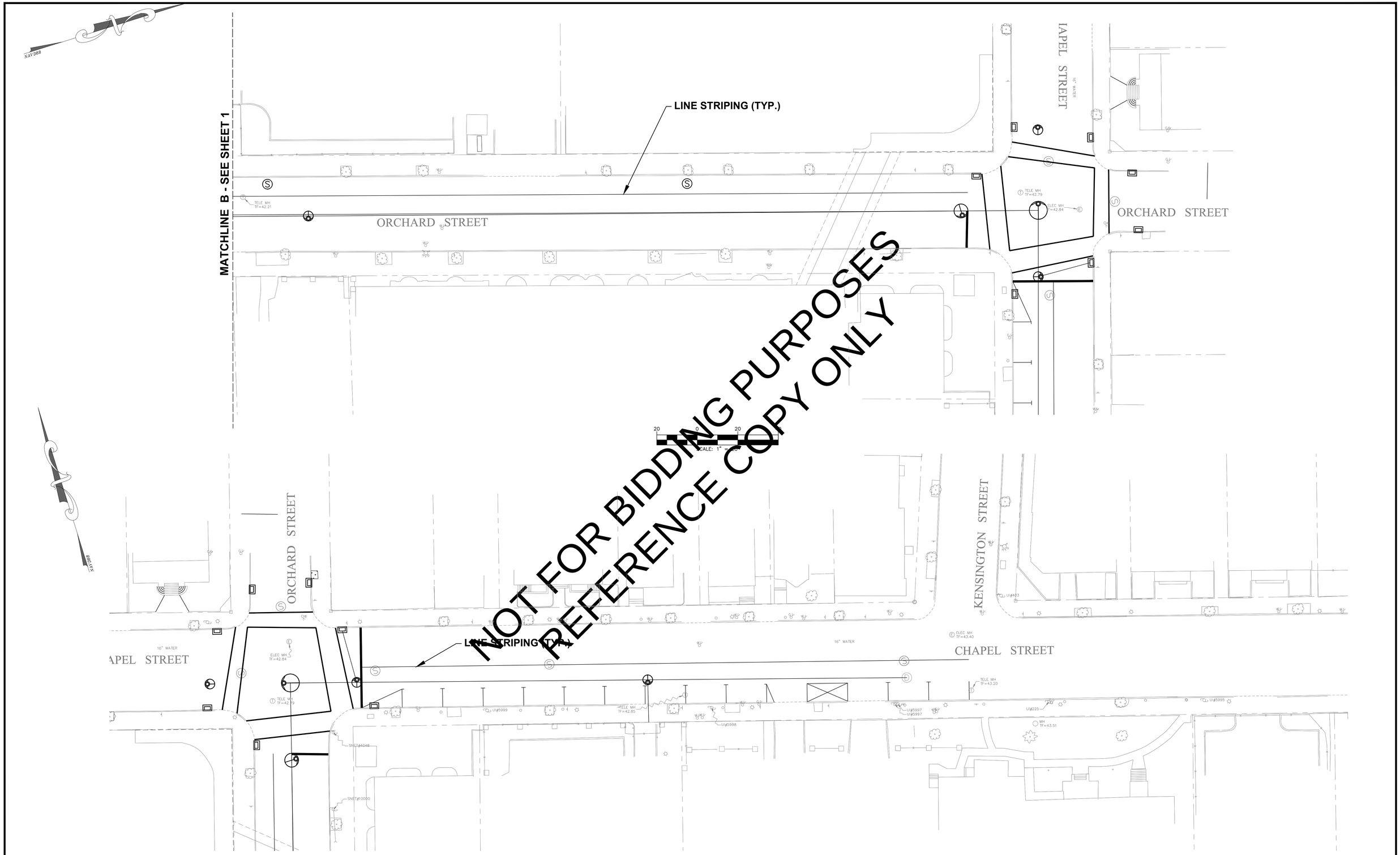
PAVEMENT MARKING PLAN
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO.
21



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APPROVED BY:
DATE:

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PAVEMENT MARKING PLAN
ORCHARD STREET
CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO.
22

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
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CROSS CHK'D BY:
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DATE:

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GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY

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SEWER SEPARATION PROJECT

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MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 1A

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO. 23

NOT FOR BIDDING PURPOSES
REFERENCE COPY ONLY

REV. NO.	DATE	DRWN	CHKD	REMARKS

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ORCHARD STREET AREA SEWER SEPARATION PROJECT

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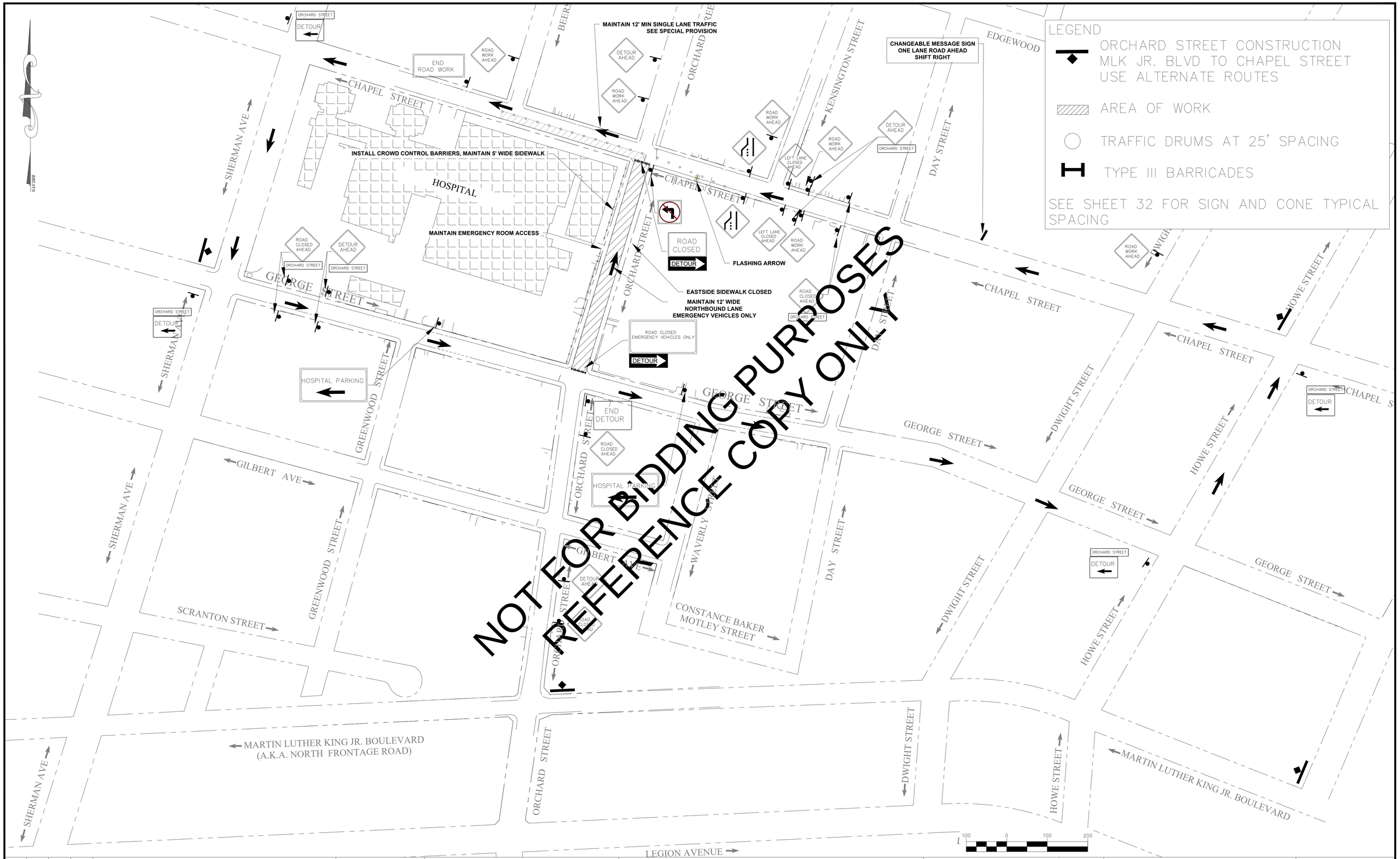
MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 1B

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 24



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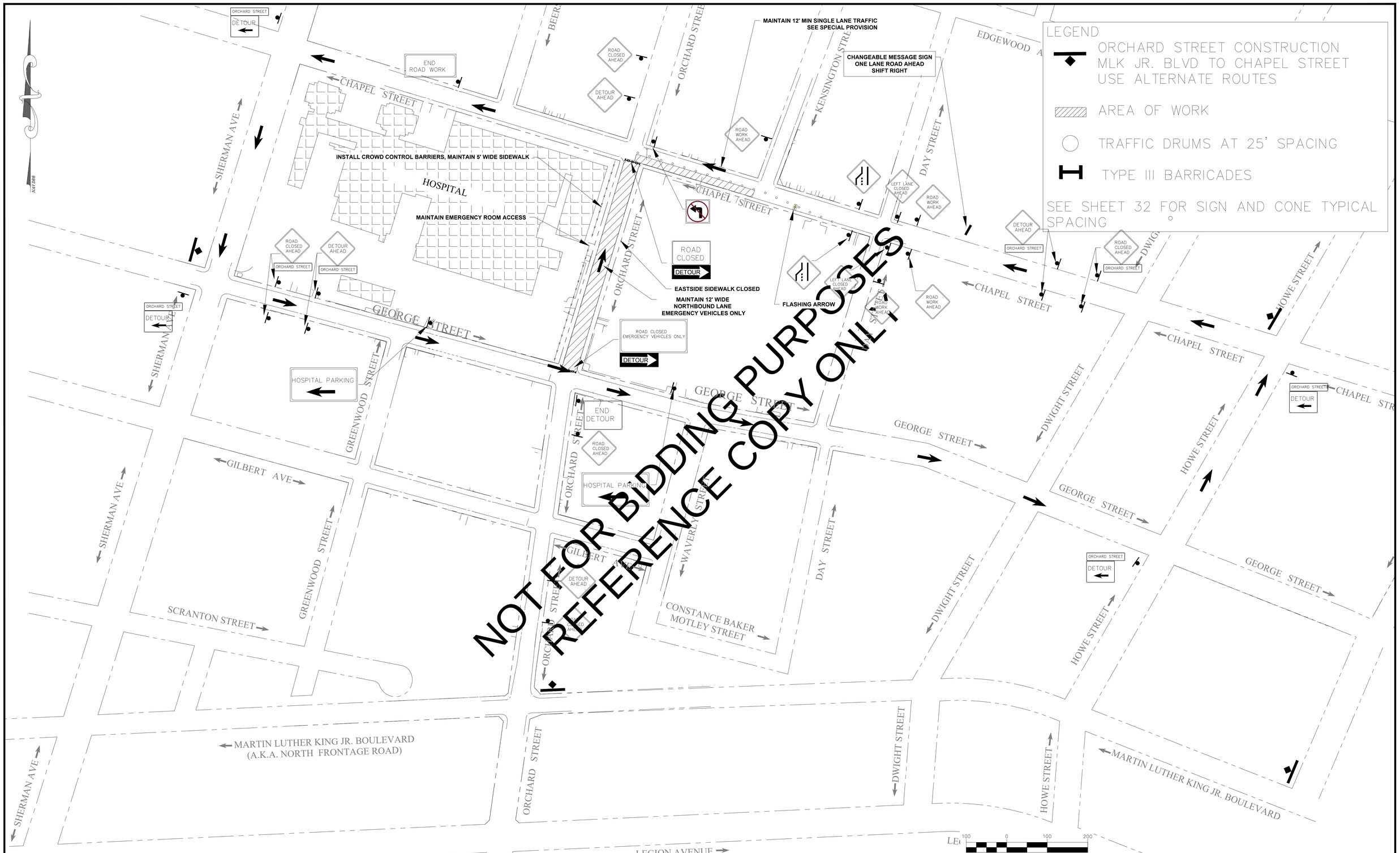
MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 2A

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO. 25



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MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 2B

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 26

REV. NO.	DATE	DRWN	CHKD	REMARKS

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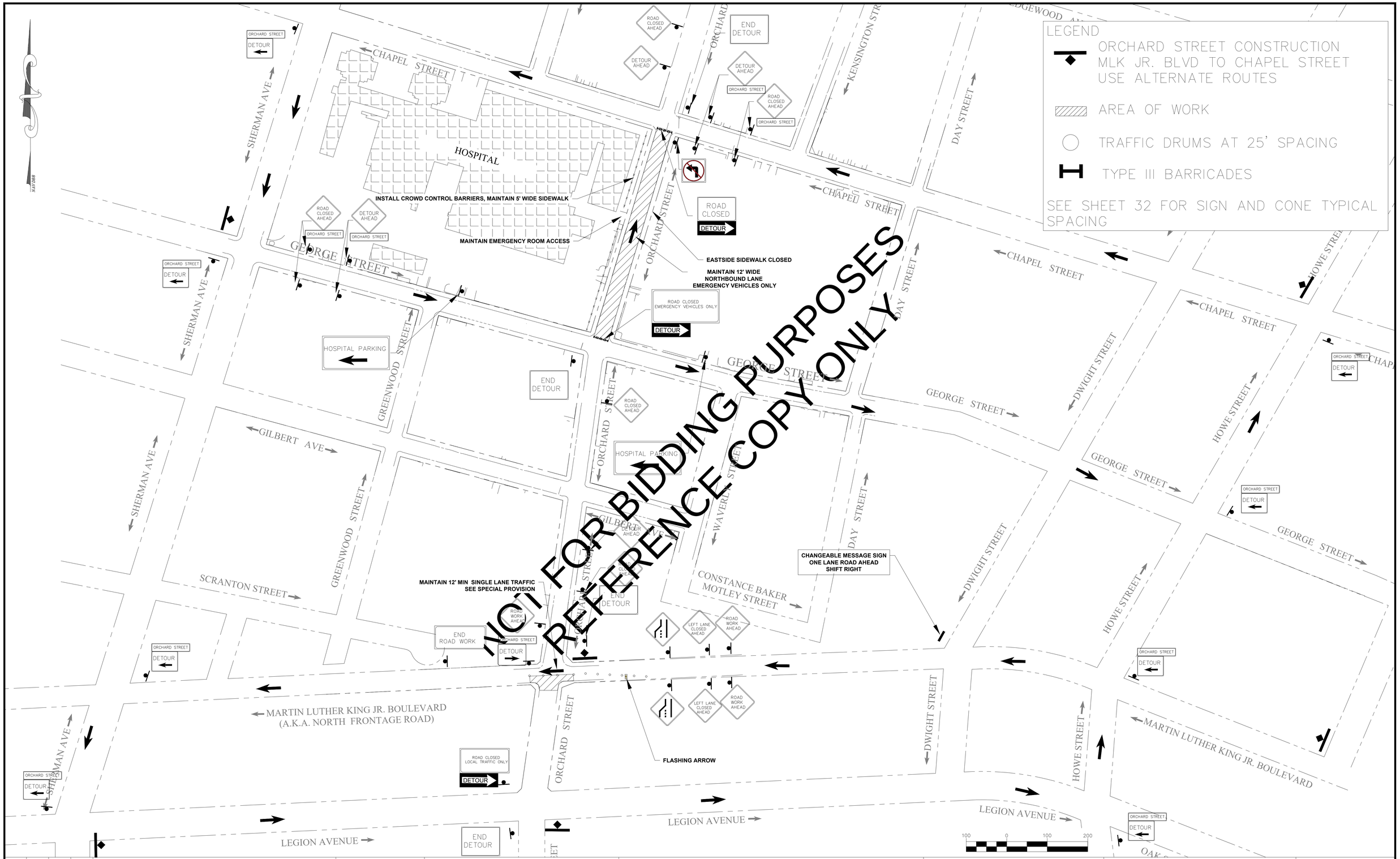
MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 2C

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 27



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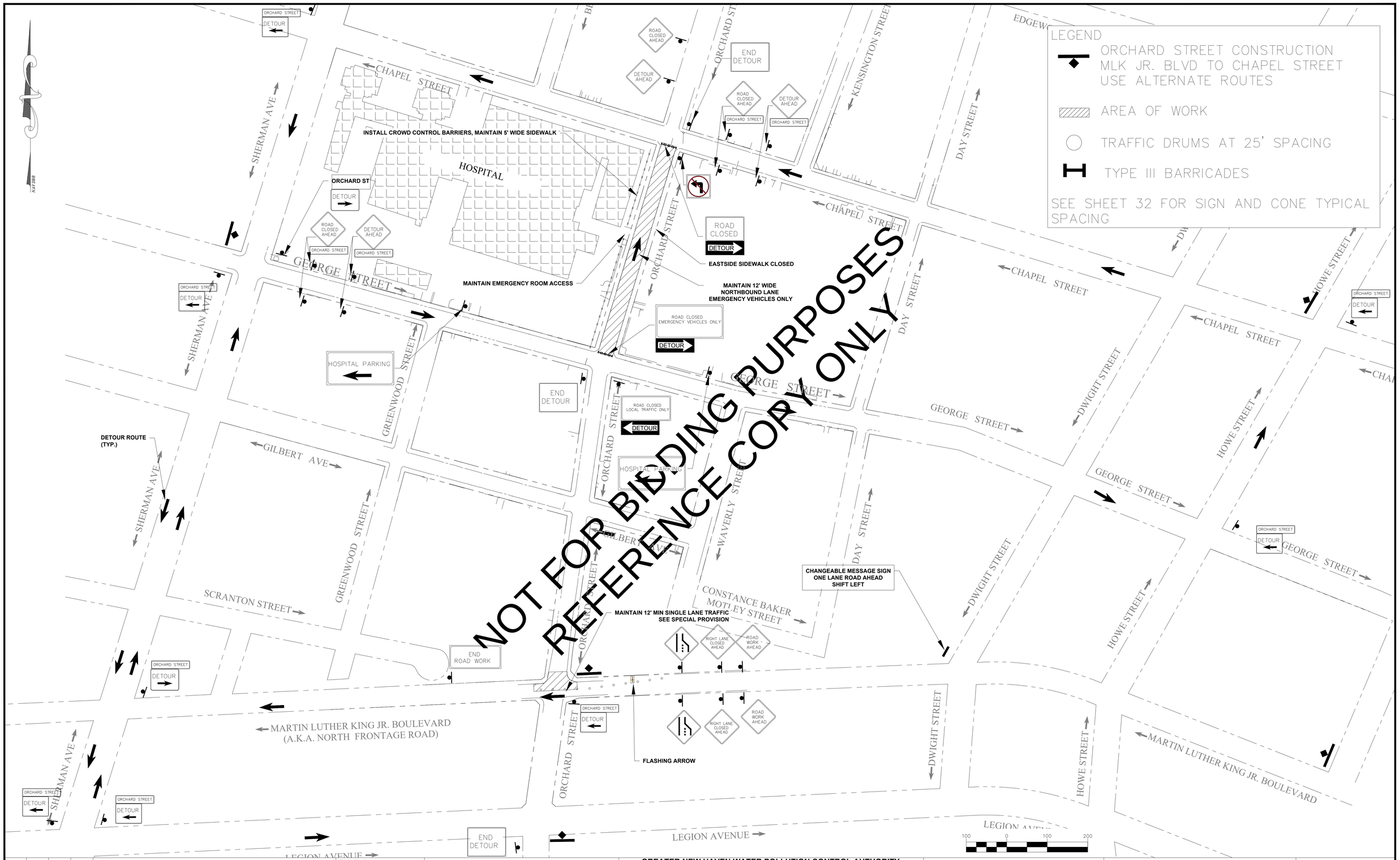
MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 3A (NIGHT WORK)

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO. 28



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ORCHARD STREET AREA SEWER SEPARATION PROJECT

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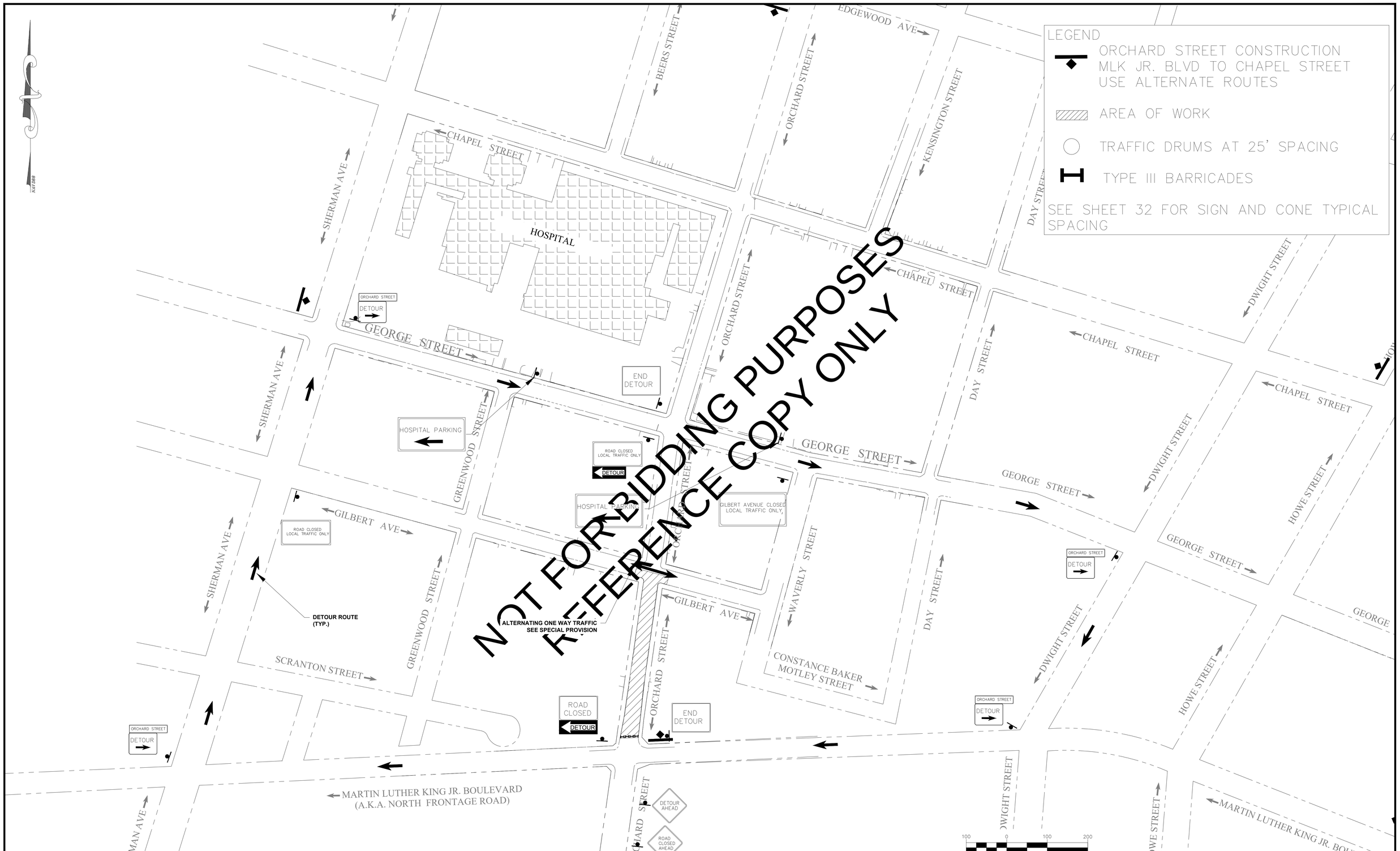
MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 3B (NIGHT WORK)

PROJECT NO. CWF 2019-05
FILE NAME:



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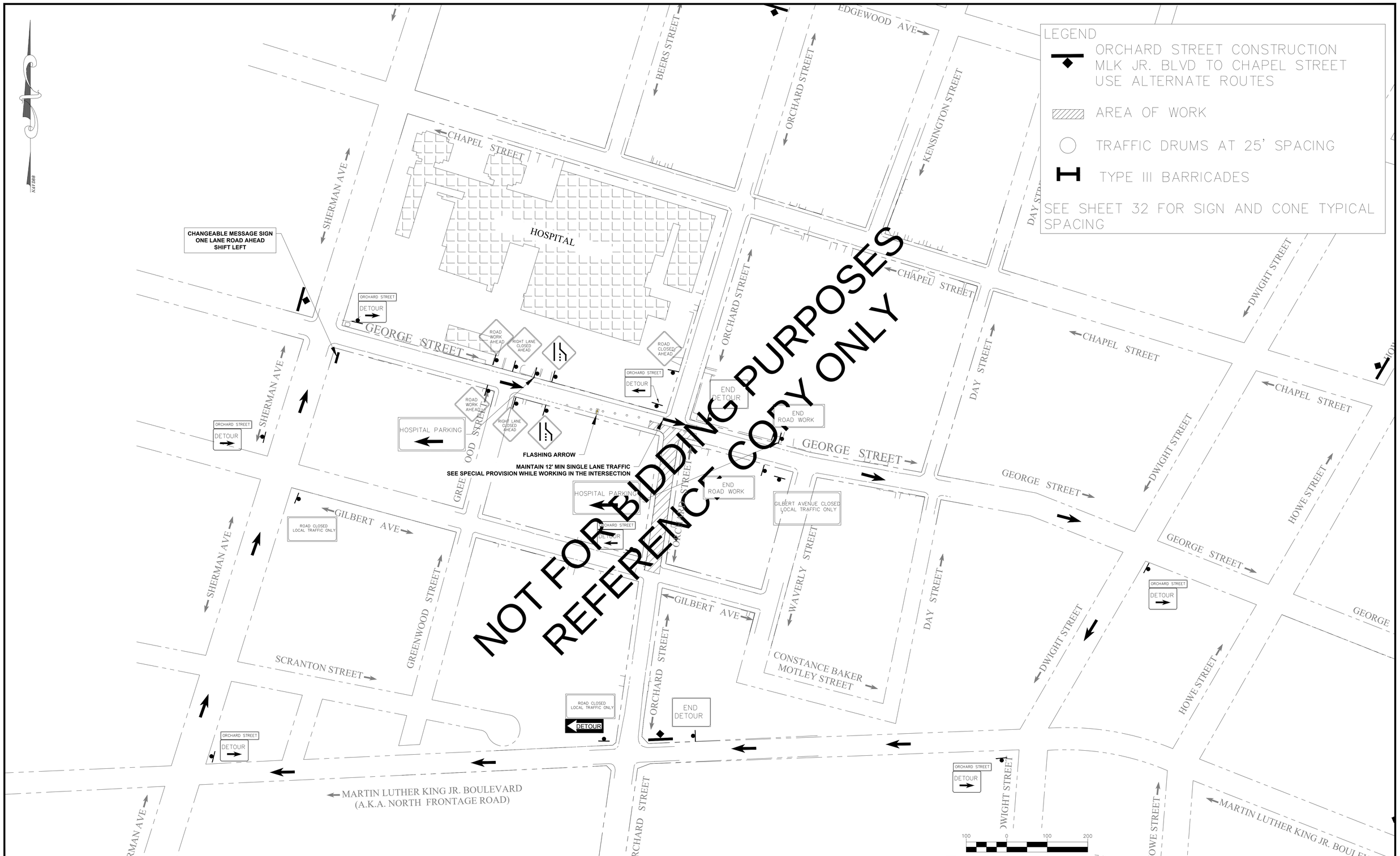
MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 4A

PROJECT NO. CWF 2019-05
FILE NAME:

SHEET NO. 30



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MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 4B

PROJECT NO. CWF 2019-05
FILE NAME:

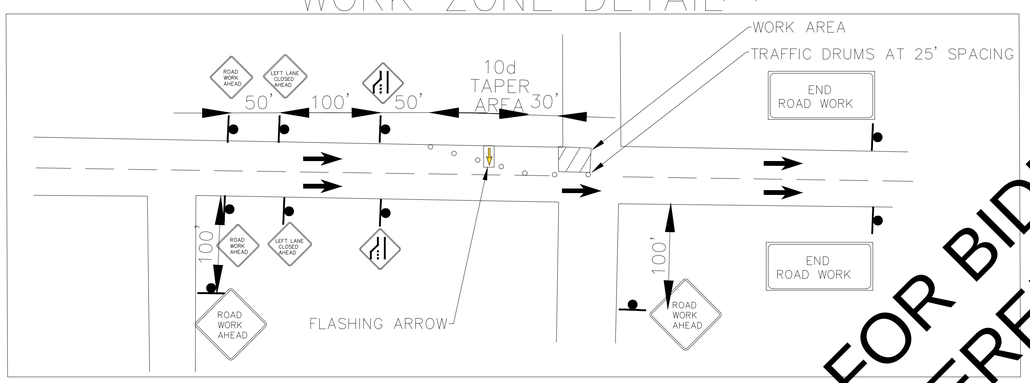
CONSTRUCTION SIGN LEGEND

	CONNDOT #	LEGEND	SIZE WXH (INCH)	BACKGROUND COLOR
ROAD WORK AHEAD	80-9602	ROAD WORK AHEAD	30 X 30	ORANGE
LEFT LANE CLOSED AHEAD	80-9847	LEFT LANE CLOSED AHEAD	30 X 30	ORANGE
RIGHT LANE CLOSED AHEAD	80-9848	RIGHT LANE CLOSED AHEAD	30 X 30	ORANGE
	80-9918	LANE ENDS MERGE RIGHT	30 X 30	ORANGE
	80-9917	LANE ENDS MERGE LEFT	30 X 30	ORANGE
END ROAD WORK	80-9612	END ROAD WORK	48 X 24	ORANGE
ROAD CLOSED	80-9080	ROAD CLOSED	48 X 30	WHITE
SIDEWALK CLOSED AHEAD CROSS HERE	80-9074	SIDEWALK CLOSED AHEAD CROSS HERE	36 X 24	WHITE
SIDEWALK CLOSED AHEAD	80-9928	SIDEWALK CLOSED AHEAD	30 x 18	WHITE

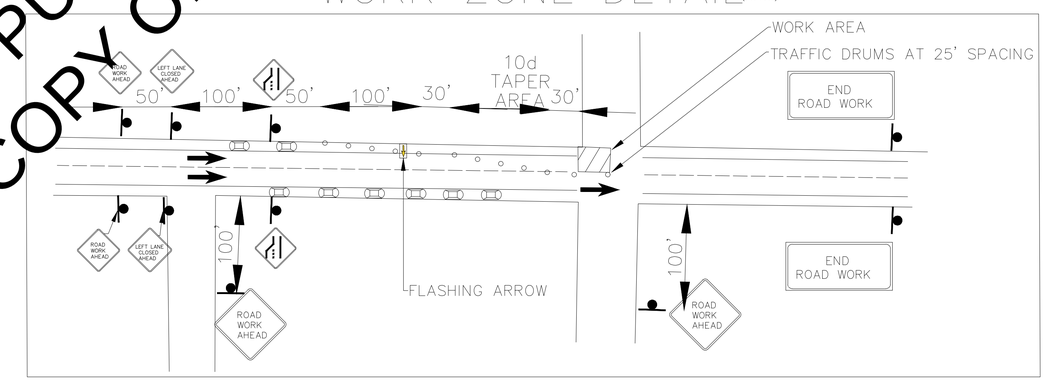
	CONNDOT #	LEGEND	SIZE WXH (INCH)	BACKGROUND COLOR
DETOUR	80-9702	DETOUR	48 X 18	ORANGE
DETOUR	80-9701	DETOUR	48 X 18	ORANGE
END DETOUR	80-9708	END DETOUR	24 X 18	ORANGE
AHEAD	80-9870	AHEAD	24 X 12	ORANGE
ORCHARD STREET	80-9916	ORCHARD STREET	48 X 10	ORANGE
GILBERT AVENUE CLOSED LOCAL TRAFFIC ONLY	80-9928	GILBERT AVENUE CLOSED LOCAL TRAFFIC ONLY	48 X 30	ORANGE
ROAD CLOSED EMERGENCY VEHICLES ONLY	80-9928	ROAD CLOSED EMERGENCY VEHICLES ONLY	60 X 30	ORANGE
HOSPITAL PARKING	80-9928	HOSPITAL PARKING	48 X 30	ORANGE
ROAD CLOSED LOCAL TRAFFIC ONLY	80-9928	ROAD CLOSED LOCAL TRAFFIC ONLY	60 X 30	ORANGE

	CONNDOT #	LEGEND	SIZE WXH (INCH)	BACKGROUND COLOR
	31-1603	NO LEFT TURN(SYMBOL)	36 X 36	WHITE
DETOUR	80-9710	DETOUR W/ARROW	30 X 24	ORANGE
	50-5934	BUSINESS ACCESS W/ARROW	36 X 36	BLUE

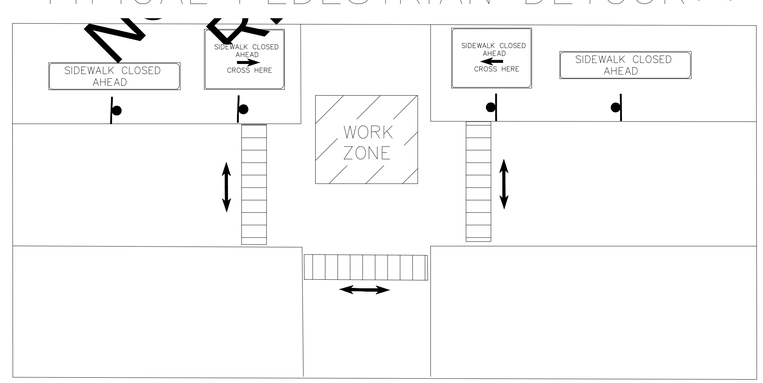
WORK ZONE DETAIL (N.T.S)



WORK ZONE DETAIL (N.T.S)



TYPICAL PEDESTRIAN DETOUR (N.T.S)



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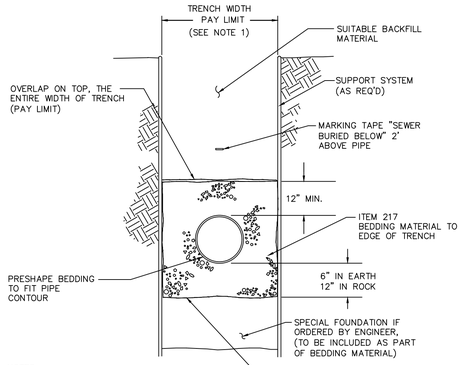
CONSTRUCTION SIGN LEGEND AND WORK ZONE DETAIL

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 32



NOTES:

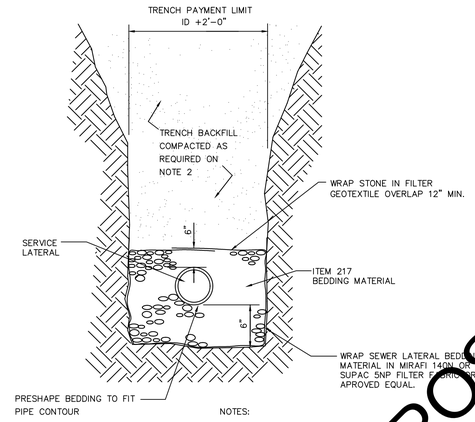
1. MAXIMUM PAY WIDTH FOR BEDDING MATERIAL & TRENCH EXCAVATION IS I.D + 2'-0" FOR I.D. LESS THAN 30"; I.D. + 3'-0" FOR EQUAL TO OR GREATER THAN 30".
2. BEDDING AND BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY.

TRENCH SECTION
SANITARY SEWER MAIN

NTS

3 JANUARY, 2020

SD205-01



NOTES:

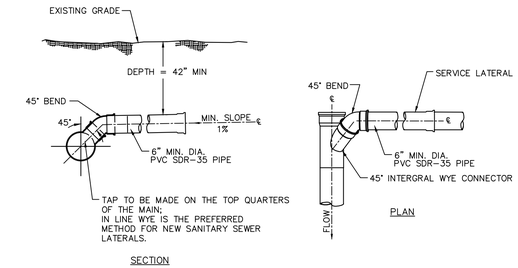
1. MAXIMUM PAY WIDTH PER BEDDING MATERIAL & TRENCH EXCAVATION IS I.D. + 2'-0".
2. BEDDING AND BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY.

TRENCH SECTION
SANITARY SEWER LATERAL

NTS

3 JANUARY, 2020

SD205-02



NOTES:

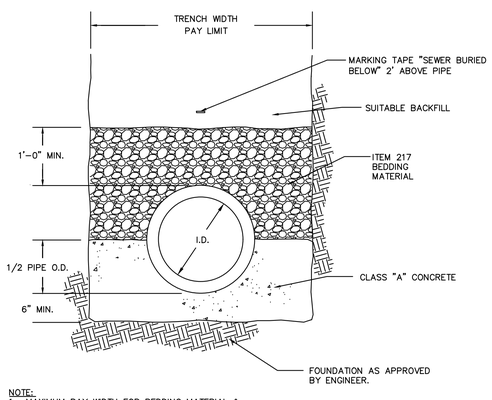
1. SANITARY SEWER LATERALS SHALL NOT BE RE-USED UNLESS APPROVED BY THE AUTHORITY.
2. ALL PIPING SHALL BE LAID WITH CARE IN ACCORDANCE WITH GNHWPCA STANDARD SPECIFICATIONS, AS AMENDED.
3. APPROPRIATE BEDDING AND BACKFILL SHALL BE AS RECOMMENDED BY THE GNHWPCA.
4. GRANULAR FILL AND BEDDING MATERIAL SHALL CONFORM TO GNHWPCA STANDARD SPECIFICATIONS.
5. SHIELDED COUPLINGS ARE REQUIRED ON ALL DISSIMILAR PIPE TRANSITIONS, COUPLING SHALL BE MISSION FLEX-SEAL ARC COUPLINGS, OR APPROVED EQUAL.
6. NEW LATERALS SHALL BE CONSTRUCTED WITH INTEGRAL WYES. NEW CONNECTION TO EXISTING SEWER MAINS SHALL BE CORED. DRILL CORE SHALL BE PROPER SIZE PER INSERT MANUFACTURER'S RECOMMENDATION. PIPE INSERTS AND SADDLES SHALL BE MANUFACTURED BY GENERAL ENGINEERING COMPANY GENECO'S "SEALTITE TYPE U" SADDLE OR APPROVED EQUAL.
7. IN NEW SUBDIVISIONS AND OTHER CONSTRUCTION INVOLVING NEW ROADS, INSTALL LATERALS TO 6 FEET BEHIND PROPERTY LINE AT A MINIMUM DEPTH OF 5 FEET FOR SEWERS IN STREET RIGHT-OF-WAY.
8. ALL LATERALS REQUIRE A CLEAN-OUT TO GRADE WITHIN 5 FEET OF THE BUILDING AND EVERY 100 FEET AS NECESSARY.

STANDARD SEWER LATERAL CONNECTION

NTS

4 JANUARY, 2020

SD512-01



NOTE:

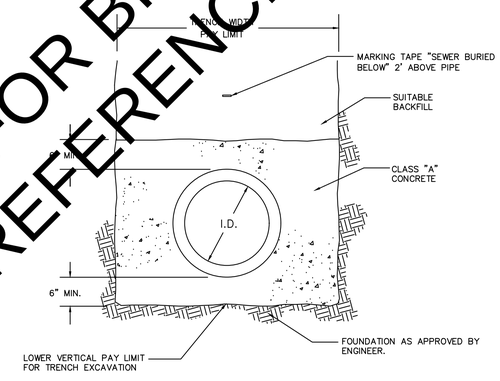
1. MAXIMUM PAY WIDTH FOR BEDDING MATERIAL & TRENCH EXCAVATION IS I.D + 2'-0" FOR I.D. LESS THAN 30", I.D. + 3'-0" FOR EQUAL TO OR GREATER THAN 30".

CONCRETE CRADLE

NTS

2 JANUARY, 2020

SD512-22



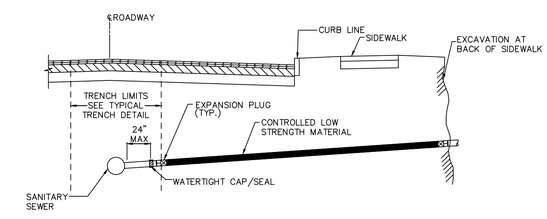
NOTE:

MAXIMUM PAY WIDTH FOR TRENCH EXCAVATION IS I.D + 2'-0" FOR I.D. LESS THAN 30", I.D. + 3'-0" FOR EQUAL TO OR GREATER THAN 30".

CONCRETE ENCASEMENT

NTS

SD512-23



NOTE:

1. EXCAVATE AS NECESSARY AT BACK OF SIDEWALK AND AT SEWER MAIN.
2. INSTALL PROPERLY SIZED EXPANSION JOINT PLUGS INTO ABANDONED SEWER LATERAL AS INDICATED – 24 INCHES FROM SANITARY SEWER.
3. FILL SEWER LATERAL WITH CONTROLLED LOW STRENGTH MATERIAL AS INDICATED.
4. SEAL SEWER LATERAL HUB WITH MALE ADAPTER AND CAP OR WITH SECOND EXPANSION JOINT OR AS APPROVED BY THE GNHWPCA IN THE FIELD.
5. BACKFILL AS REQUIRED.

PLUGGING SEWER LATERALS – EXCAVATION METHOD

NTS

SD512-30

NOT FOR BIDDING PURPOSES
REFERENCE COPY ONLY

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

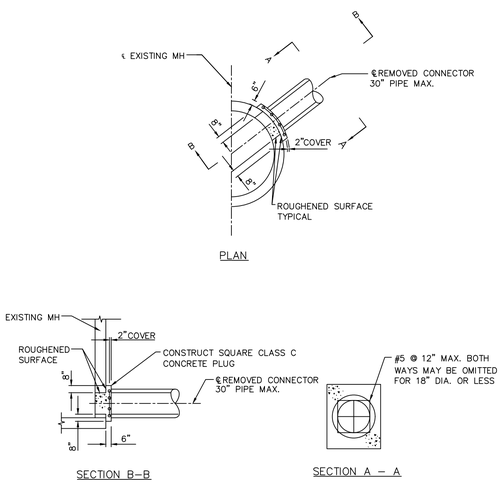
GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
260 East Street
New Haven, CT 06511
(203) 466-5280 p (203) 466-5286 f
www.gnhwpca.org

GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
ORCHARD STREET AREA
SEWER SEPARATION PROJECT

DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 WHITNEY AVENUE
HAMDEN CT 06518
203 239 4200 203 234 7376 FAX

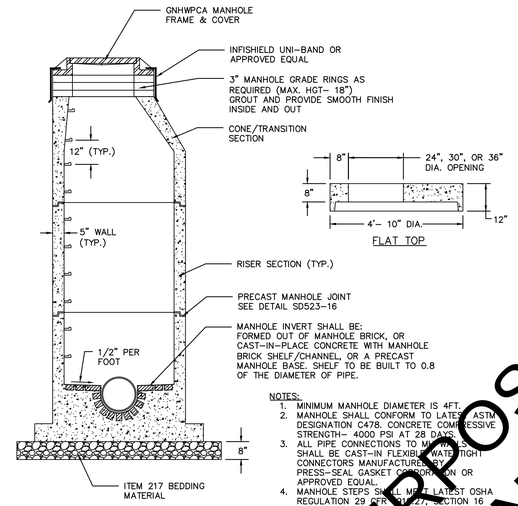
GNHWPCA STANDARD DETAILS

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 33



PIPE PLUG AT MANHOLE
NTS

SD512–32

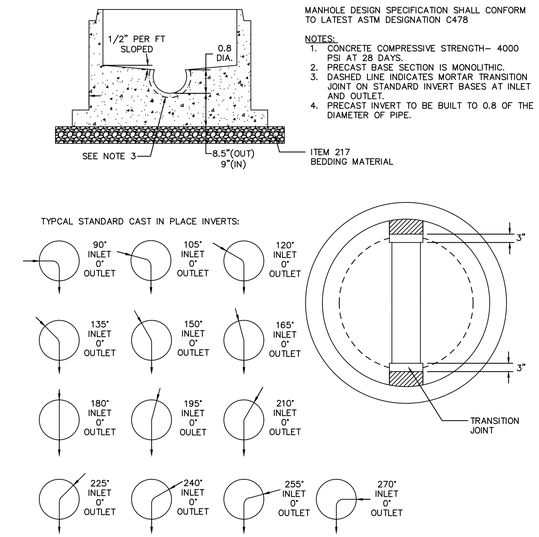


NOTES:
1. MINIMUM MANHOLE DIAMETER IS 4FT.
2. MANHOLE SHALL CONFORM TO LATEST ASTM DESIGNATION C478. CONCRETE COMPRESSIVE STRENGTH– 4000 PSI AT 28 DAYS.
3. ALL PIPE CONNECTIONS TO MANHOLES SHALL BE CAST–IN FLEXIBLE WATERTIGHT CONNECTORS MANUFACTURED BY PRESS–SEAL GASKET CORPORATION OR APPROVED EQUAL.
4. MANHOLE STEPS SHALL MEET LATEST OSHA REGULATION 29 CFR 1910.27 SECTION 16 OF ASTM SPECIFICATION C478 AND SECTION 10 ASTM SPECIFICATION C497.
5. MANHOLES SHALL BE COATED WITH BITUMOL "EBONY".
6. MH BRICK (ASTM C32) SHALL BE GRADE MS OR SM.
7. MIN. PIPE LENGTH IS 4 FEET.

4 JANUARY, 2020

PRECAST SANITARY SEWER MANHOLE
NTS

SD523–01



MANHOLE DESIGN SPECIFICATION SHALL CONFORM TO LATEST ASTM DESIGNATION C478

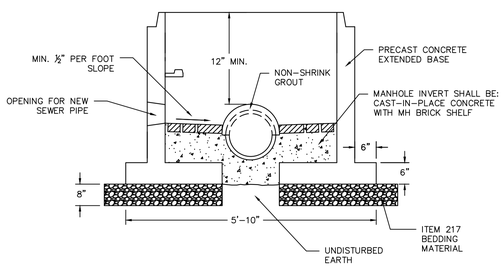
NOTES:
1. CONCRETE COMPRESSIVE STRENGTH– 4000 PSI AT 28 DAYS.
2. PRECAST BASE SECTION IS MONOLITHIC.
3. DASHED LINE INDICATES MORTAR TRANSITION JOINT ON STANDARD INVERT BASES AT INLET AND OUTLET.
4. PRECAST INVERT TO BE BUILT TO 0.8 OF THE DIAMETER OF PIPE.

3 JANUARY, 2020

MANHOLE BASE
WITH PRECAST INVERT
NTS

SD523–02

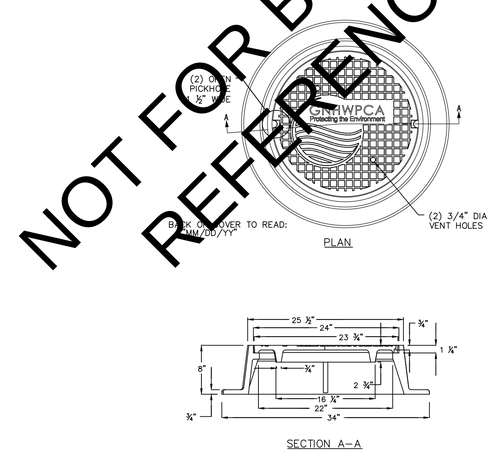
NOTES:
1. MINIMUM 4' DIAMETER MANHOLE. SEE SD523–01 FOR REMAINDER MH DETAILS.
2. DOGHOUSE OPENING MAY ONLY BE USED WHEN PLACING A NEW MANHOLE OVER AN EXISTING LINE; OTHERWISE, THE OPENING MUST BE CAST.
3. OPENINGS IN PRECAST UNITS ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER OF THE EXISTING PIPE.
4. TOP HALF OF EXISTING PIPE TO BE REMOVED FOR FULL LENGHT EXPOSED INSIDE MANHOLE. EXISTING MAIN TO BE NEATLY CUT ALONG THE SPRING LINE OF THE PIPE.
5. SEE DETAIL SD523–12 FOR ADDITIONAL INFORMATION.



DOGHOUSE MANHOLE BASE
NTS

3 JANUARY, 2020

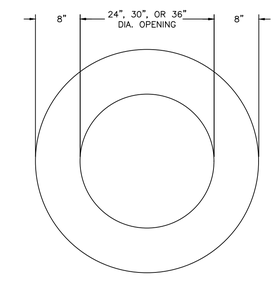
SD523–03



NOTE:
1. GNHWPCA LOGO DESIGN WITH 1" SQUARE FACE PATTERN 1/8" HIGH.
2. AASHTO HS 20 LOAD RATED.
3. ASTM A48 CLASS 35B GRAY CAST IRON WITH NO ASPHALT COATING.
4. PICK HOLES SHALL BE SIZED SUFFICIENTLY FOR EASY REMOVAL OF THE COVER AND CONFORM TO "OPEN PICK HOLE DESIGN"
5. EJ MODEL 1246C OR APPROVED EQUAL

TYPICAL SANITARY SEWER
MANHOLE FRAME AND COVER
NTS

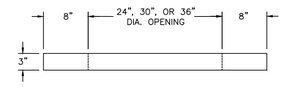
SD523–04



MANHOLE DESIGN SPECIFICATION CONFORMS TO LATEST ASTM DESIGNATION C478

DESIGN NOTES:
1. REINFORCING STEEL WELDED WIRE FABRIC CONFORMS TO LATEST ASTM SPECIFICATION A185.
2. REINFORCING STEEL DEFORMED BARS CONFORM TO LATEST ASTM SPECIFICATION A615.
3. CONCRETE COMPRESSIVE STRENGTH– 4000 PSI AT 28 DAYS.

GRADE RING PLAN VIEW



GRADE RING ELEVATION VIEW

MANHOLE GRADE RING
NTS

SD523–05

NOT FOR BIDDING PURPOSES
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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

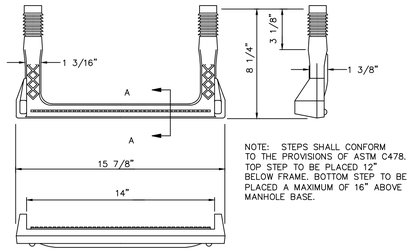
GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
260 East Street
New Haven, CT 06511
(203) 466-5280 p (203) 466-5286 f
www.gnhwpca.org

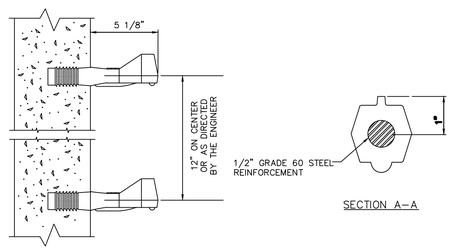
GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
ORCHARD STREET AREA
SEWER SEPARATION PROJECT

dtc
DIVERSIFIED TECHNOLOGY CONSULTANTS
2325 WHITNEY AVENUE
HAMDEN CT 06518
203 239 4200 203 234 7376 FAX

GNHWPCA STANDARD
DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 34

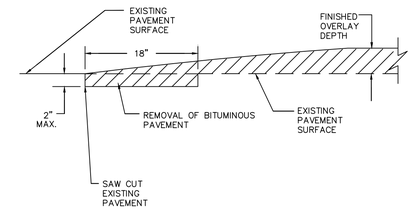




COPOLYMER POLYPROPYLENE PLASTIC
STEEL REINFORCED MANHOLE STEP

NTS

SD523–06

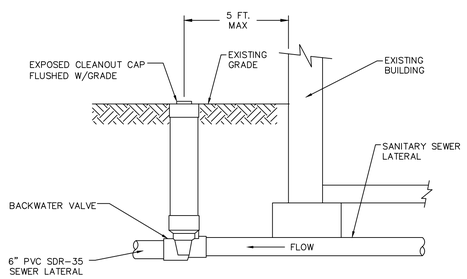


OVERLAY TRANSITION TO
EXISTING PAVEMENT

NTS

SD405–01

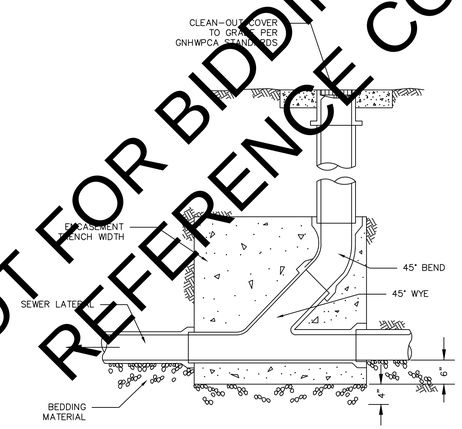
NOT FOR BIDDING PURPOSES
REFERENCE COPY ONLY



NOTES:
1. BACKWATER VALVE WITH RISER UNIT AS MANUFACTURED BY CLEAN CHECK, INC. OR APPROVED EQUAL.
2. ALL BACKWATER VALVES REQUIRE A CLEANOUT TO GRADE DOWNSTREAM OF THE VALVE WITHIN 5 FEET.

BACKWATER VALVE

NTS

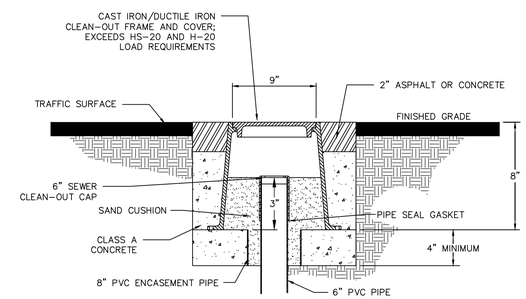


NOTES:

1. CLEAN–OUT PIPE SIZE SHALL MATCH EXISTING LATERAL.
2. NEW SEWER LATERALS AND CLEAN–OUTS SHALL BE 6–INCH OR AS APPROVED BY THE GNHWPCA.
3. ENTIRE WYE SECTION TO BE ENCASED IN CONTROLLED LOW STRENGTH MATERIAL OR GRANULAR FILL, AS DIRECTED BY THE GNHWPCA.

STANDARD CLEAN–OUT

NTS



CLEANOUT FRAME & COVER
FOR USE ON PAVED AREAS

NTS

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
260 East Street
New Haven, CT 06511
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SEWER SEPARATION PROJECT

DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 WHITNEY AVENUE
HAMDEN CT 06518
203 239 4200 203 234 7376 FAX

GNHWPCA STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 35

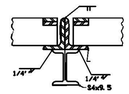
CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

DRWG: K:\ENGINEER\DWG | FILE: CITYSTD\DETAILS\2009 DETAILS | DATE: DEC. 1, 2009 | DRAWING NO.: STD-NH-08G

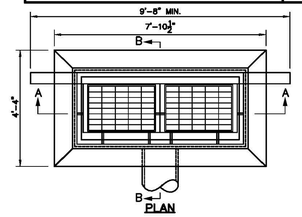
NOTES

FOR DETAILS OF STEEL FRAME & GRATE SEE STANDARD SHEET NO. 507-K OR 507-L. TWO FRAMES & GRATES REQUIRED FOR EACH CATCH BASIN. WALLS OF ALL CATCH BASINS OVER 10 FT. DEEP TO BE INCREASED TO 12" THICKNESS, INSIDE DIMENSIONS TO REMAIN THE SAME. ALL STEEL,EXCEPT REINFORCING BARS,SHALL BE GALVANIZED IN ACCORDANCE WITH M.06.03.

ALL BARS SHALL HAVE 2" COVER.
ALL STRAIGHT REINF. BARS WILL BE #4 BARS.
ALL STIRRUPS WILL BE #3 BARS 9" C.C. TYP.

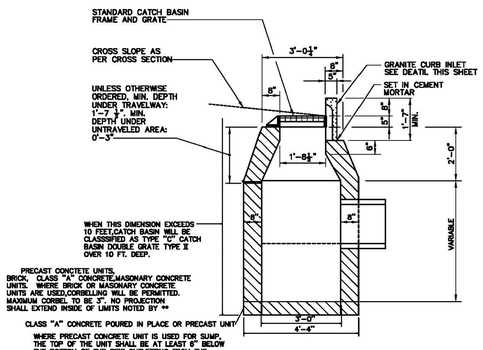


DETAIL "A"

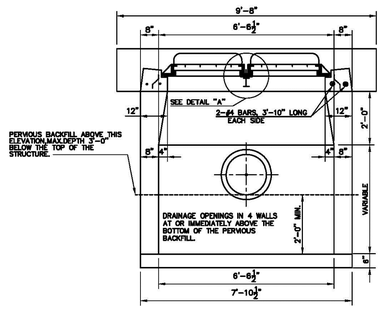


PLAN

NOTE: WHEN CATCH BASIN IS SET IN CONCRETE PAVEMENT THE 1/2" SLOPE ON THE TOP SURFACE SHALL BE CHANGED TO MATCH ADJOINING PAVEMENT.



SECTION B-B



SECTION A-A

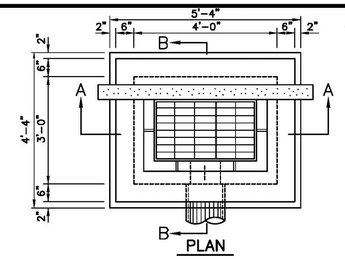
TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE II
SCALE: ½"=1'-0"

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

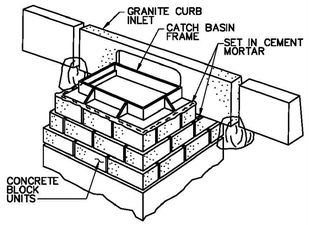
DRWG: K:\ENGINEER\DWG | FILE: CITYSTD\DETAILS\2009 DETAILS | DATE: DEC. 1, 2009 | DRAWING NO.: STD-NH-08

GENERAL NOTES

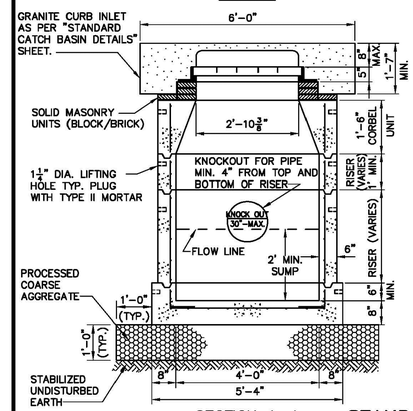
1. THIS SHEET IS SUPPLIMENTAL TO THE STANDARD SHEET OF THESE CONTRACT DRAWINGS ENTITLED "STANDARD CATCH BASIN DETAILS".
2. "STANDARD CATCH BASIN DETAILS" SHEET SHALL BE THE BASIS FOR CONSTRUCTION OF ALL CATCH BASIN AND DROP INLET DETAILS WHICH ARE NOT SHOWN ON THIS SHEET INCLUDING, BUT NOT LIMITED TO:
   "CATCH BASIN HOOD AND APPURTENANCES"
   "GRANITE CURB INLET"
   "TYPE C L DROP INLET"
   "TYPE C-L CATCH BASIN"
3. THIS SHEET IS FOR THE PURPOSE OF IDENTIFYING THE CHARACTERISTICS OF THE PRECAST ITEMS WHICH MAY BE UTILIZED BY THE CONTRACTOR IN LIEU OF THE MASONRY CONSTRUCTION DETAILED ON THE "STANDARD CATCH BASIN DETAILS" SHEET.
4. PRECAST CATCH BASINS AND DROP INLETS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M199 (ASTM C478).



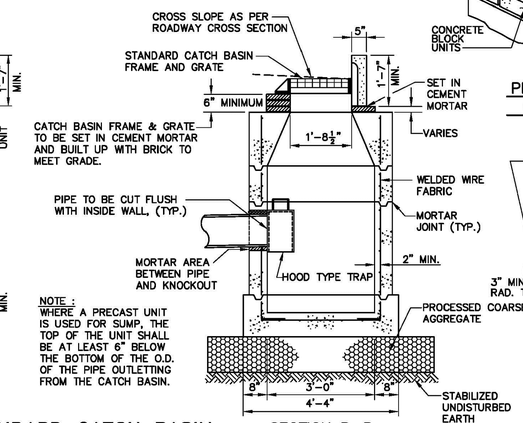
PLAN



PERSPECTIVE OF CATCH BASIN
NO SCALE

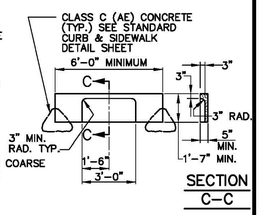


SECTION A-A



SECTION B-B

NOTE :
WHERE A PRECAST UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE O.D. OF THE PIPE OUTLETTING FROM THE CATCH BASIN.



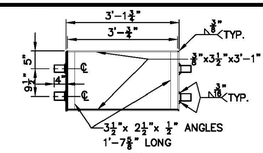
SECTION C-C

GRANITE CURB INLET
NO SCALE

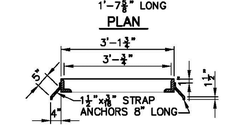
STANDARD CATCH BASIN
TYPE "C" (SHOWN) (TYPE "C-L" SIMILAR)
NO SCALE

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

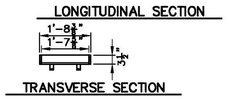
DRWG: K:\ENGINEER\DWG | FILE: CITYSTD\DETAILS\2009 DETAILS | DATE: DEC. 1, 2009 | DRAWING NO.: STD-NH-06



PLAN

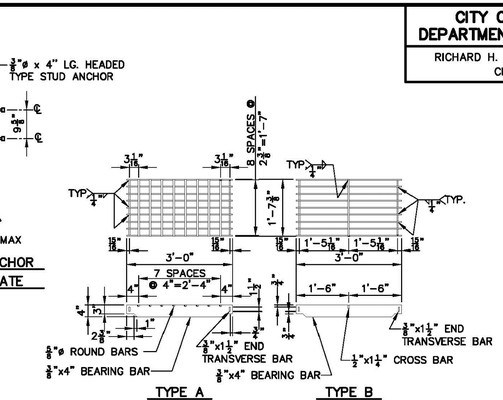


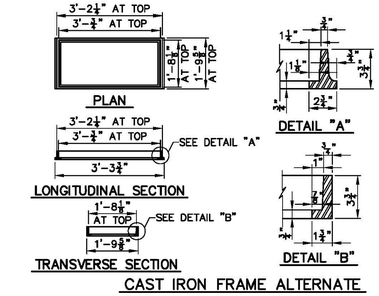
LONGITUDINAL SECTION



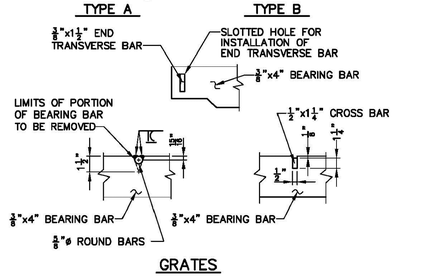
TRANSVERSE SECTION

STEEL FRAME





CAST IRON FRAME ALTERNATE



GRATES

NOTES:

GENERAL

STEEL OR CAST IRON FRAMES TO BE USED FOR TYPE "A" & "B" GRATES.

TYPE "A" GRATES TO BE USED ON ALL ROADWAYS WHERE BICYCLE TRAFFIC IS ALLOWED OR AS DIRECTED BY THE ENGINEER.

TYPE "B" GRATES TO BE USED ON ALL LIMITED ACCESS HIGHWAYS, RAMPS AND WHERE BICYCLE TRAFFIC IS NOT ALLOWED OR AS DIRECTED BY THE ENGINEER. STEEL FRAMES AND GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH M.06.03.

CAST IRON FRAMES AND GRATES ARE NOT TO BE GALVANIZED.

STEEL

ALL METAL UNITS SUBJECT TO MANUFACTURING TOLERANCES.

ONLY LOW HYDROGEN ELECTRODES SHALL BE USED.

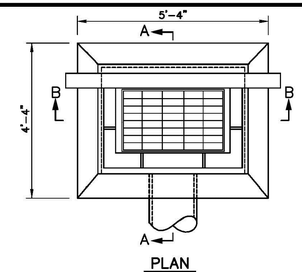
DIMENSIONAL TOLERANCES MAY BE ±1/16 ".

WELDING WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION.

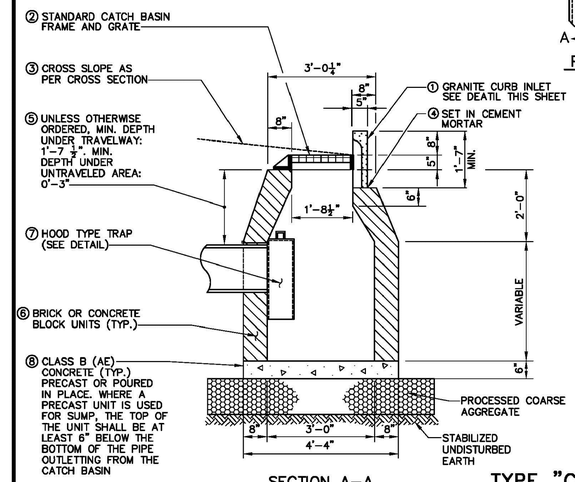
CATCH BASIN FRAME AND GRATE
NOT TO SCALE

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

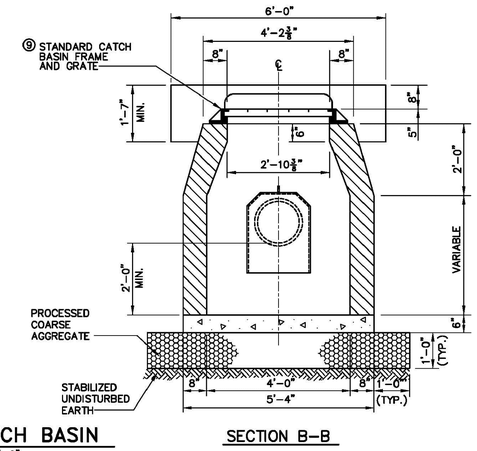
DRWG: K:\ENGINEER\DWG | FILE: CITYSTD\DETAILS\2009 DETAILS | DATE: DEC. 1, 2009 | DRAWING NO.: STD-NH-08A



PLAN



SECTION A-A



SECTION B-B

TYPE "C" CATCH BASIN
SCALE: ½"=1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

GNHWPCA Protecting the Environment
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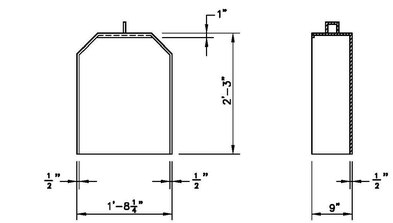
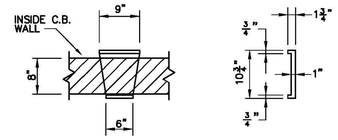
CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 36

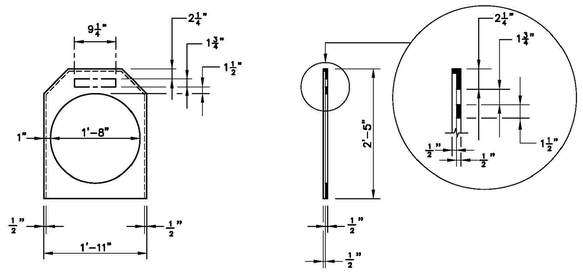
CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER
DRIVE: K:\ENGINEER\DWG
FILE: CITYSTD\DETAILS\2009 DETAILS
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–09



CATCH BASIN TRAP HOOD



HOOK PLATE



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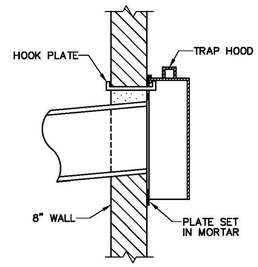

DETAIL OF INSTALLATION

CATCH BASIN HOOD AND APPURTENANCES AS MANUFACTURED BY CAMPBELL FOUNDRY CO., OR APPROVED EQUAL.

DETAILS OF CATCH BASIN HOOD & APPURTENANCES

SCALE: 3/4"=1'–0"

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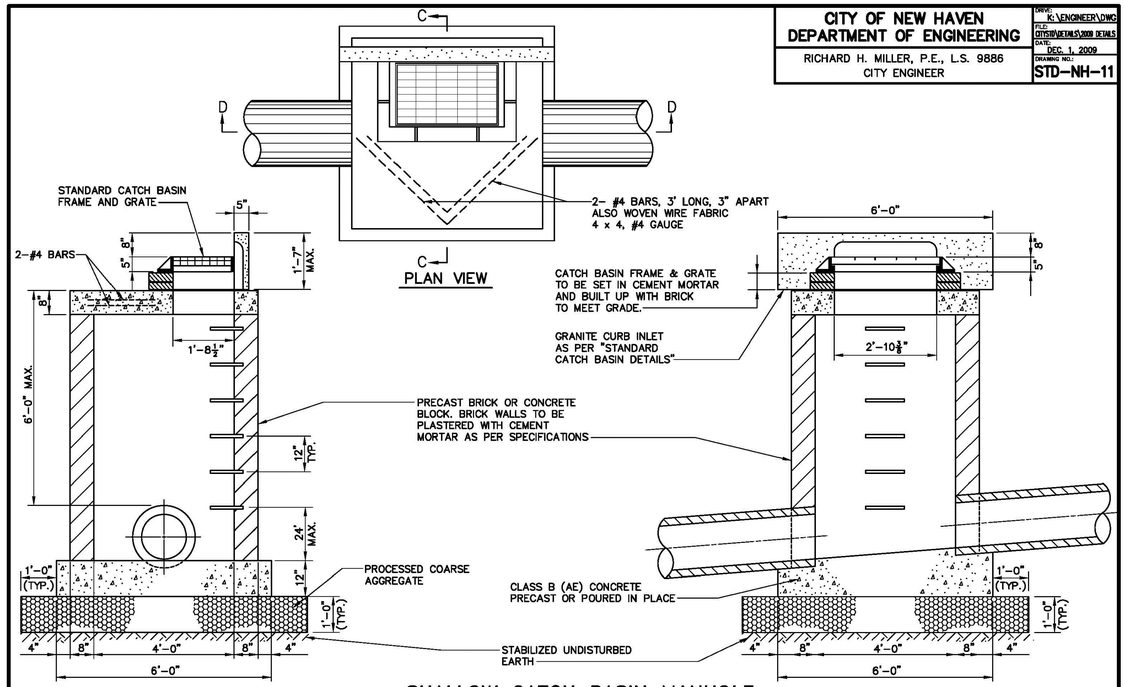
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–11



SHALLOW CATCH BASIN MANHOLE

SCALE: 1/2"=1'–0"

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FILE: CITYSTD\DETAILS\2009 DETAILS
DATE: DEC. 1, 2009
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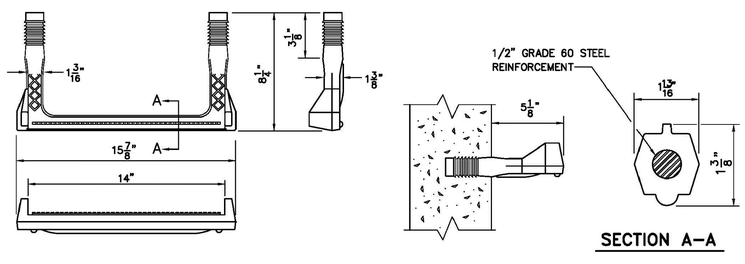

SECTION A–A

COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED MANHOLE STEP

NO SCALE

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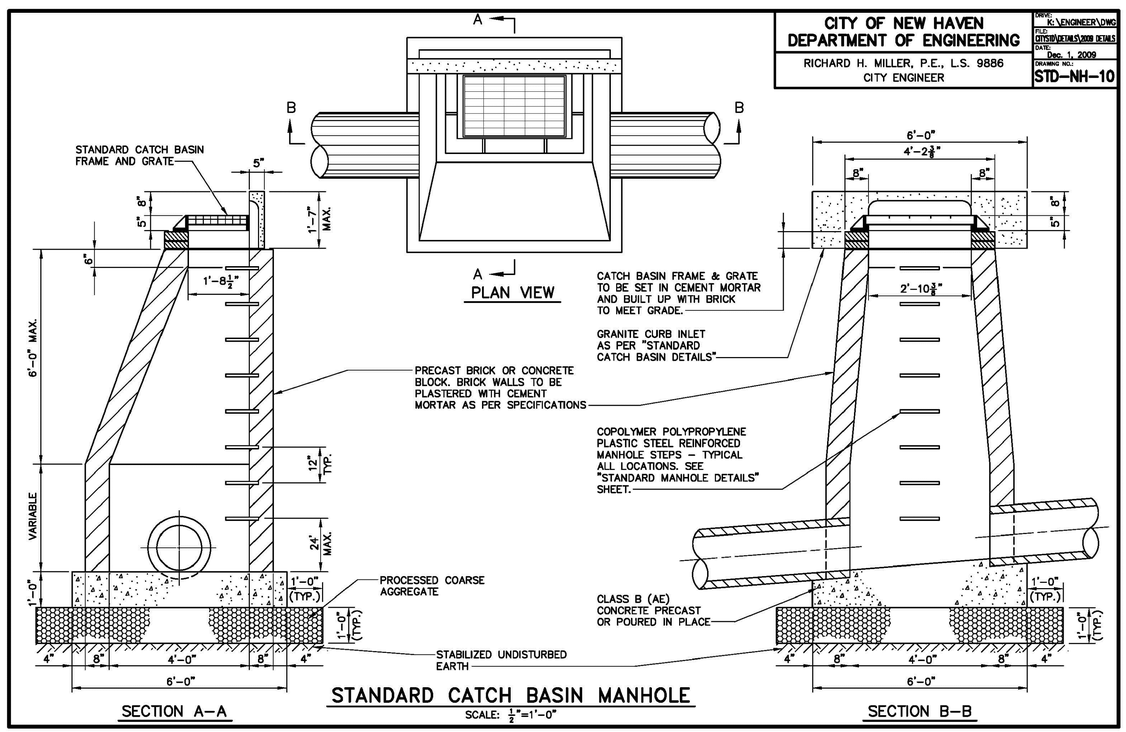
FILE: CITYSTD\DETAILS\2009 DETAILS
DATE: Dec. 1, 2009
DRAWING NO.: STD–NH–10



STANDARD CATCH BASIN MANHOLE

SCALE: 1/2"=1'–0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

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CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 37

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

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FILE: CITYSTD\DETAILS\2009 DETAILS
DATE: DEC. 1, 2009
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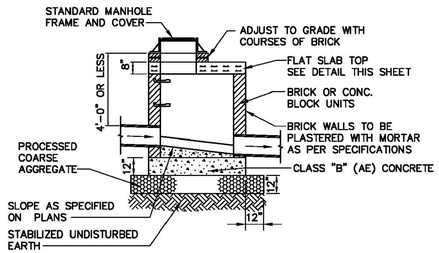
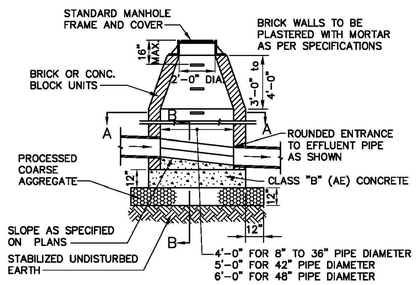
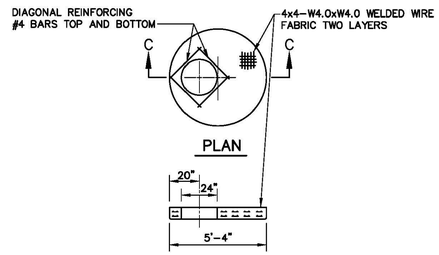


VERTICAL SECTION
STANDARD SHALLOW STORM MANHOLE



VERTICAL SECTION



PLAN

SECTION C–C
FLAT TOP SLAB

STANDARD STORM MANHOLES
SCALE: $\frac{1}{4}$"=1'–0"

NOTE :
ALL MANHOLE STEPS TO BE COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED.

CITY OF NEW HAVEN
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CITY ENGINEER

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DATE: DEC. 1, 2009
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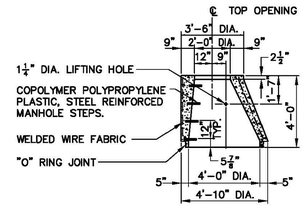
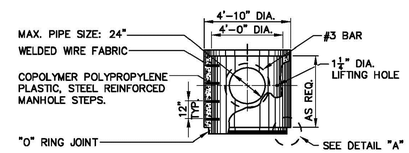
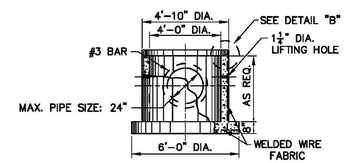


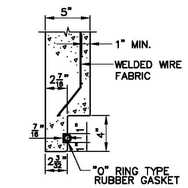
PRECAST ECCENTRIC MANHOLE CONE
SCALE: $\frac{1}{4}$"=1'–0"



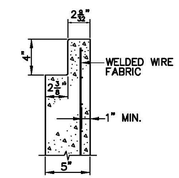
PRECAST MANHOLE RISER SECTION
SCALE: $\frac{1}{4}$"=1'–0"



PRECAST MANHOLE BASE
SCALE: $\frac{1}{4}$"=1'–0"



DETAIL A
SCALE: $1\frac{1}{2}$"=1'–0"



DETAIL B
SCALE: $1\frac{1}{2}$"=1'–0"

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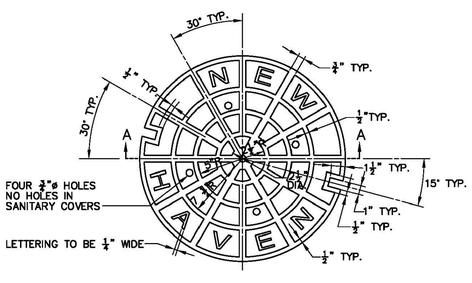
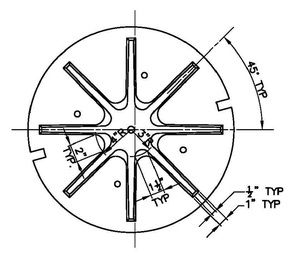
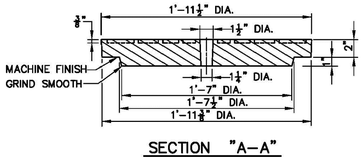
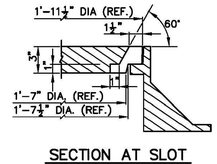
DRAWING NO.: STD–NH–07A







SECTION "A–A"



SECTION AT SLOT

STANDARD MANHOLE COVER
SCALE: $1\frac{1}{2}$"=1'–0"

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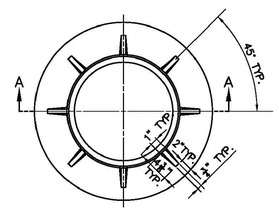
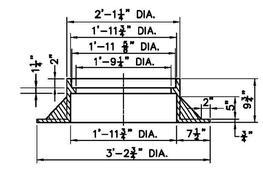
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–07



PLAN



SECTION A–A

STANDARD MANHOLE FRAME
SCALE: $\frac{3}{4}$"=1'–0"

GENERAL NOTES

CAST IRON CATCH BASIN FRAME & MANHOLE FRAMES & COVERS – CAST IRON SHALL CONFORM TO AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) STANDARD SPECIFICATION FOR GREY IRON CASTINGS, ASTM DESIGNATION A 48 CLASS 25 B FOR FRAMES & 30 B FOR COVERS.
CASTINGS SHALL BE BOLDLY FILLETED AT ANGLES AND THE ARRISES SHALL BE SHARP AND PERFECT. THEY SHALL BE TRUE TO PATTERN IN FORM AND DIMENSIONS, FREE FROM POURING FAULTS, SPONGINESS, CRACKS BLOWHOLES AND OTHER DEFECTS IN POSITIONS AFFECTING THEIR STRENGTH AND VALUE FOR THE SERVICE INTENDED.
CASTINGS SHALL BE SAND BLASTED OR OTHERWISE EFFECTIVELY CLEANED OF SAND AND SCALE, SO AS TO PRESENT A SMOOTH, CLEAN AND UNIFORM SURFACE BEFORE INSPECTION.
THE FOLLOWING PORTIONS OF THE COVERS AND FRAMES SHALL BE MACHINED: FRAME – HORIZONTAL SURFACE TO RECEIVE THE COVER; COVER – UNDER SURFACE WHICH RESTS ON FRAME. AFTER MACHINING, IT SHALL NOT BE POSSIBLE TO ROCK ANY COVER WHEN IT IS SEATED IN ANY POSITION IN ITS ASSOCIATED FRAME.
MANUFACTURER'S NAME AND CATALOG NUMBER MUST BE CAST ON EACH FRAME AND COVER.
NO FRAME AND COVER SHALL WEIGH LESS THAN 90% OF WEIGHT INDICATED BELOW.

CATCH BASIN FRAMES SHALL BE CAST IN SUBSTANTIAL PERMANENT STEEL FORMS, SO CONSTRUCTED THAT NO OVERALL DIMENSION OF A CASTING SHALL VARY MORE THAN ONE–QUARTER INCH OVER OR UNDER THE SPECIFIED DIMENSION, AND SO THAT THE FRAME FOR THE INLET GRATE IS IN THE DESIRED POSITION IN THE COMPLETED UNIT. SUITABLE PROVISION SHALL BE MADE IN PRECASTING THE UNITS FOR CONVENIENT HANDLING OF THE COMPLETED UNIT AND ADDITIONAL REINFORCEMENT STEEL SHALL BE PROVIDED TO ALLOW FOR SUCH HANDLING.
PRECAST UNITS SHALL BE CURED IN ACCORDANCE WITH AASHO M–170.
STEEL GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION FORM 814, SECTION M.06.03.

WEIGHT:

FRAME	360 lbs.
COVER	160 lbs.
TOTAL (MIN.)	520 lbs.

CATCH BASIN AND MANHOLE FRAMES, GRATES AND COVERS SHALL BE AS MFG. BY CAMPBELL FOUNDRY CO., OR APPROVED EQUAL.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

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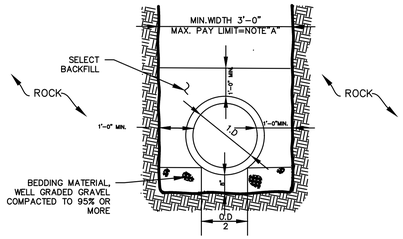
CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 38

CITY OF NEW HAVEN DEPARTMENT OF ENGINEERING	DRIVE: K:\ENGINEER\DWG
	FILE: CITYSD\DETAILS\2009 DETAILS
RICHARD H. MILLER, P.E., L.S. 9886	DATE: DEC. 1, 2009
CITY ENGINEER	DRAWING NO.: STD–NH–19



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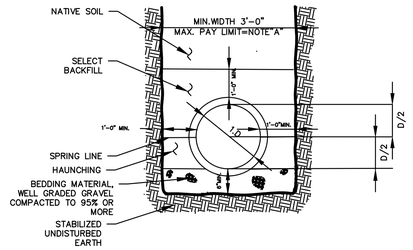

CLASS C BEDDING

TYPICAL PIPE BEDDING

NO SCALE

IF APPLICABLE:

NOTE "A"
TRENCH PAY LIMIT

1. FOR PIPE LESS THAN 36"ø PAY LIMIT = I.D. + 2'–0".
2. FOR PIPE 36"ø OR OVER PAY LIMIT = I.D. + 3'–0".
3. FOR SHEETED TRENCH, MAX. WIDTH ALLOWED AND MAX. PAY LIMIT SHALL BE I.D. + 4'–0".

NOTE "B"
PAYMENT WILL BE MADE UNDER THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.

NOTE:
ALL PIPING SHALL BE LAID WITH CARE IN ACCORDANCE WITH CT DOT STANDARD SPECIFICATIONS FORM 814–A OR FORM 815 AS AMENDED. WHERE POLYETHYLENE PIPE IS USED, APPROPRIATE BACKFILL SHALL BE APPROVED BY THE CITY ENGINEER OR AS RECOMMENDED BY THE MANUFACTURER FOR SAID APPLICATION.

NOT FOR BIDDING PURPOSES
REFERENCE COPY ONLY

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
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CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

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DATE: DEC. 1, 2009
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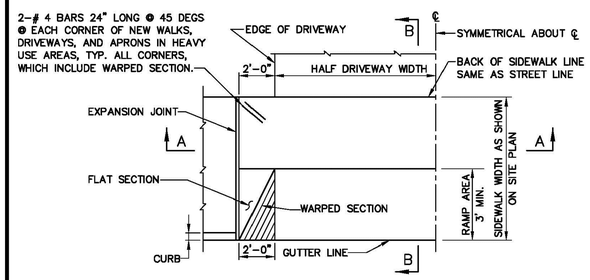
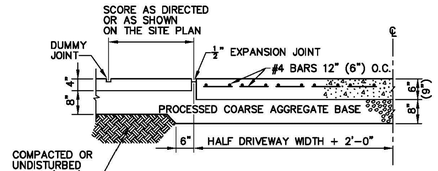
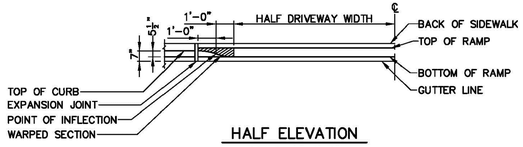


HALF PLAN
SCALE: $\frac{1}{4}$"=1'–0"



SECTION A–A
SCALE: $\frac{1}{4}$"=1'–0"



HALF ELEVATION
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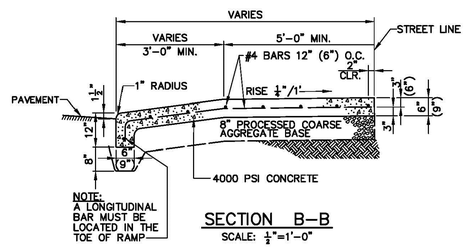

SECTION B–B
SCALE: $\frac{1}{4}$"=1'–0"

TYPICAL CONCRETE DRIVEWAY DETAILS

AS SHOWN

NOTE: THE NUMBERS IN PARENTHESES APPLY ONLY TO COMMERCIAL DRIVEWAYS

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
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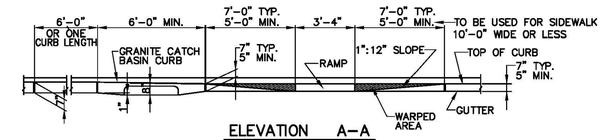
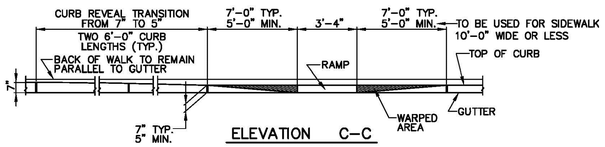
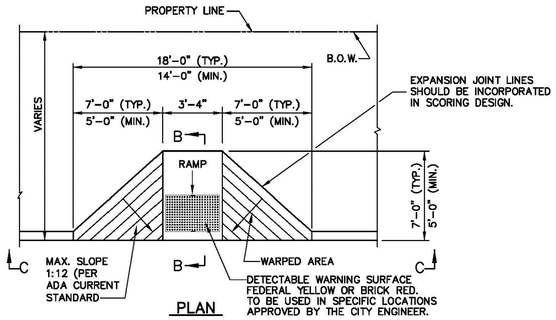
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–05



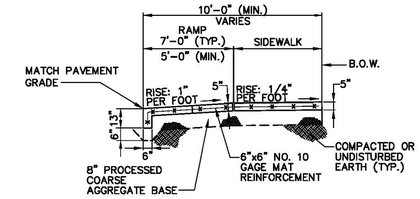
ELEVATION A–A



ELEVATION C–C



PLAN



SECTION B–B

GENERAL NOTES

1. Ramps for handicapped shall be constructed at pedestrian crosswalk.
2. Drainage design in the vicinity of ramps for handicapped shall be considered an integral part of the design of these ramps. No drainage structure shall be placed within the limits of a ramp for handicapped on new designs.
3. Ramps for handicapped shall be constructed the same as sidewalks, except that the texture of the concrete shall be a course broom finish transverse to the slope of the ramp.
4. Care shall be taken to assure a uniform grade on the ramp, free of abrupt changes.
5. Minimum width of ramps for handicapped shall be 3'–4".
6. Existing concrete sidewalk shall be cut with concrete saw for installation of ramps for handicapped.
7. Ramp Layout shall be such that Expansion Joints shall not form acute angles.

RAMP FOR HANDICAPPED – TYPICAL SECTION

SCALE: $\frac{1}{4}$"=1'–0"

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CITY ENGINEER

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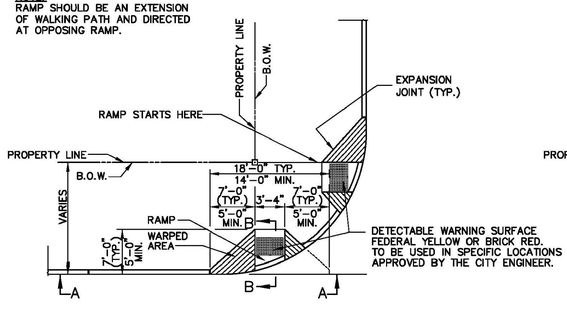
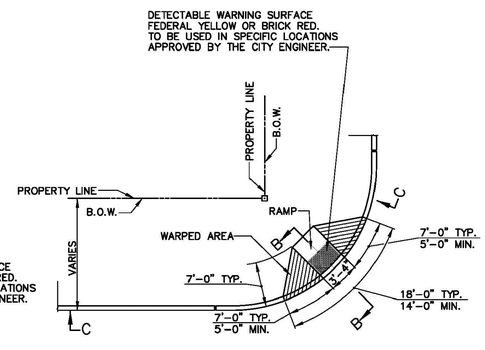
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–05A

NOTE: RAMP SHOULD BE AN EXTENSION OF WALKING PATH AND DIRECTED AT OPPOSING RAMP.



RECOMMENDED TYPICAL PLAN



ALTERNATE PLAN

NOTE: TO BE USED ONLY IN SPECIFIC LOCATIONS APPROVED BY CITY ENGINEER.

RAMP FOR HANDICAPPED AT STREET CORNER

SCALE: $\frac{1}{8}$"=1'–0"

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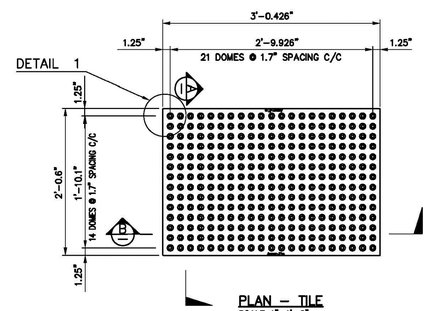
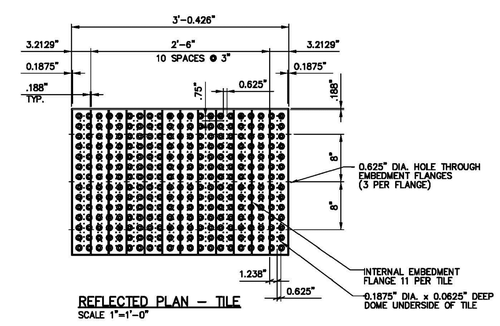
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–05C



PLAN – TILE
SCALE 1"=1'–0"



REFLECTED PLAN – TILE
SCALE 1"=1'–0"

DETECTABLE WARNING SURFACE

SCALE: 1"=1'–0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
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CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 40

CITY OF NEW HAVEN
DEPARTMENT OF ENGINEERING
RICHARD H. MILLER, P.E., L.S. 9886
CITY ENGINEER

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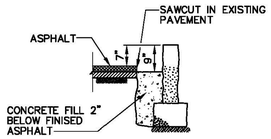
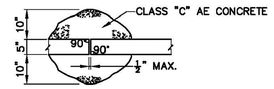
FILE: CITYSTD\DETAILS\2009 DETAILS
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–02



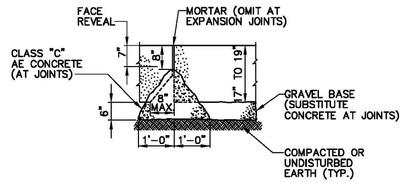
CROSS SECTION

CURB AT STREET CUT

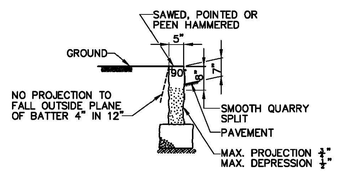
SCALE: ½"=1'–0"



PLAN



PARTIAL ELEVATION



CROSS SECTION

GRANITE CURB DETAIL

SCALE: ½"=1'–0"

NOTES:
1. ALL PIECES SHALL BE 6'–0" LONG EXCEPT FOR CLOSURES WHERE NO PIECE LESS THAN 4'–0" LONG SHALL BE USED.
2. CURBS OF RADIUS LESS THAN 100' SHALL BE CUT OR CAST TO REQUIRED RADIUS AND LENGTH.
3. USE ½" PREFORMED EXPANSION JOINT FILLER SPACED NOT MORE THAN 20'–0" O.C. FOR PRECAST OR CAST–IN–PLACE CONCRETE CURB.
4. JOINT BETWEEN GRANITE OR CONCRETE SECTIONS ARE NOT TO EXCEED ½".
5. MINIMUM WIDTH OF CURB AT BOTTOM SHALL BE 4" OR NO GREATER THAN ⅔ THE HEIGHT OF THE PIECE.
6. CLASS "C" AE CONCRETE TO BE PLACED AT JOINTS AS SHOWN IN GRANITE CURB DETAIL, AND ALONG STREET TRENCH AS SHOWN IN DETAIL.

MATERIALS:
1. STONE FOR GRANITE CURBING SHALL BE HARD AND DURABLE GRANITE OF LIGHT COLOR AND UNIFORM TEXTURE, NEITHER STRATIFIED NOR LAMINATED. IT SHALL BE FREE FROM SEAMS AND EVIDENCE OF WEAKENING OR DISINTEGRATION AND SHALL HAVE GOOD, SMOOTH SPLIT FACES.
2. THE TOP SURFACE SHALL BE POINTED, PEEN HAMMERED AND SAWED. THE TOP 8 INCHES OF THE FACE SHALL BE SMOOTH QUARRY SPLIT AND FREE FROM DRILL HOLES. THE ENDS OF ALL STONES SHALL BE SQUARE WITH THE PLANES OF THE TOP AND FACE, AND SO FINISHED THAT WHEN STONES ARE PLACED END TO END AS CLOSELY AS POSSIBLE, NO SPACE MORE THAN – INCH SHALL SHOW IN THE JOINT FOR THE FULL WIDTH OF THE TOP OR THE TOP 8 INCHES OF THE FACE. THE TOP STREET SIDE FACE OF THE CURB SHALL NOT HAVE SHARP EDGES.

**NOTE:
TO BE USED ONLY IN AREAS AS APPROVED BY THE CITY ENGINEER.

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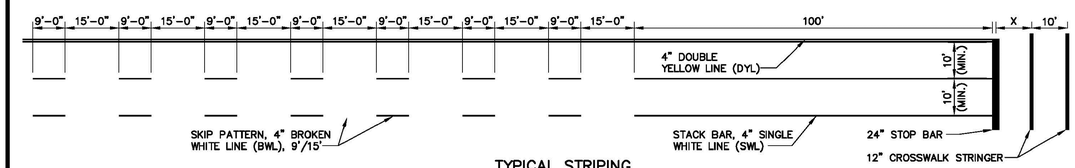
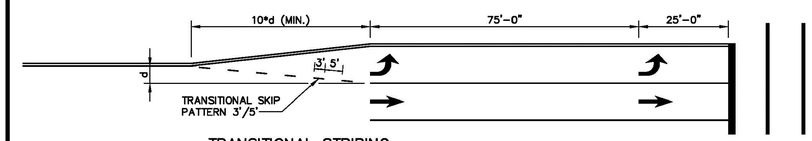
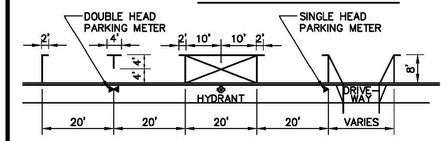
● SIGNAL, X = 10 FT. (MIN.)
● STOP SIGN, X = 4 FT.



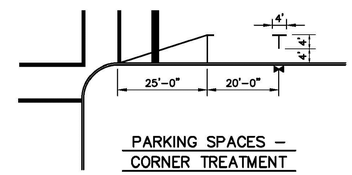
TYPICAL STRIPING



TRANSITIONAL STRIPING



ON STREET PARKING SPACES



PARKING SPACES – CORNER TREATMENT

PAVEMENT MARKING LEGEND

STRINGER – 12" WHITE
STOP BARS – 24" WHITE
STACK BARS – 100' x 4" (WL) (UNLESS OTHERWISE NOTED)
4" BWL (BROKEN WHITE LINE SKIP PATTERNS)
9'W, 15' SKIP
CAT TRACKS (A) – 2'W, 4' SKIP
CAT TRACKS (B) – 3'W, 5' SKIP
CENTERLINE (℄) – 4"YELLOW x 4"YELLOW
EDGE LINE – 4"YELLOW OR 4" WHITE
PARKING STALLS
AT DRIVEWAY OR CROSSWALK

NOTES:
1. LAYOUT OF PAVEMENT MARKINGS MUST BE APPROVED BY THE DEPARTMENT OF TRAFFIC AND PARKING PRIOR TO APPLICATION OF PERMANENT MARKINGS.
2. ALL LONG LINE PAVEMENT MARKING SHALL BE 15 MIL EPOXY RESIN.
3. ALL INTERSECTION TYPE PAVEMENT MARKINGS SHALL BE 90 MIL THERMOPLASTIC. THIS INCLUDES STOP BARS, ARROWS AND LEGENDS.

TYPICAL PAVEMENT MARKING DETAILS

SCALE: 1"=20'–0"

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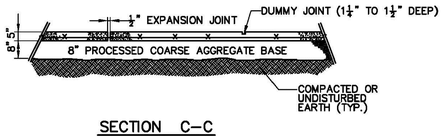
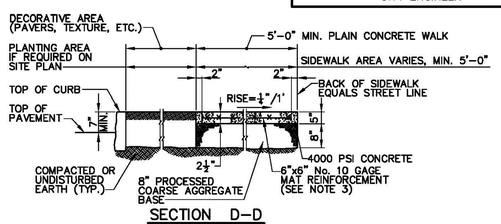
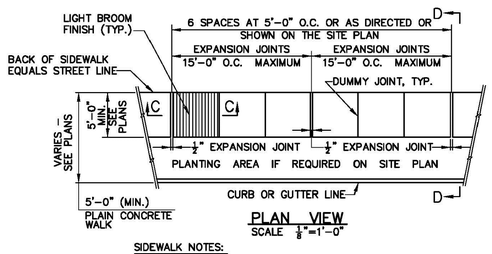


SECTION C–C
SCALE ⅜"=1'–0"



SECTION D–D
SCALE ½"=1'–0"

NOTES:
1. MATERIALS, METHODS OF INSTALLATION, CURING, TESTING, SHALL CONFORM TO "STATE OF CT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FORM 814A, OR 815 ● 1995 OR CURRENT SPECIFICATION FOR SUCH WORK.
2. ANY WALKING SURFACE SHALL BE LIGHTLY BROOMED PERPENDICULAR TO THE TRAVEL WAY.
3. WIRE MESH SHALL BE PLACED 2 1/2" BELOW THE SIDEWALK SURFACE. MATERIAL SHALL BE 6 "x 6" NO. 10 GAGE AND IN ACCORDANCE WITH ASTM 185 (AASHTO M55),AS SHOWN ON THE PLANS OR AS DIRECTED. WIRE MESH TO BE USED IN ALL COMMERCIAL SIDEWALK APPLICATIONS. MESH MAY BE OMITTED ONLY WITH THE SPECIFIC AUTHORIZATION OF THE CITY ENGINEER ON A CASE–BY–CASE BASIS.



PLAN VIEW
SCALE ⅛"=1'–0"

DUMMY JOINT
FULL SIZE

SIDEWALK NOTES:
1. UNLESS OTHERWISE SPECIFIED OR DIRECTED BACK OF WALK TO BE ON STREET LINE

TYPICAL SIDEWALK DETAILS

SCALE : AS NOTED

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CITY ENGINEER

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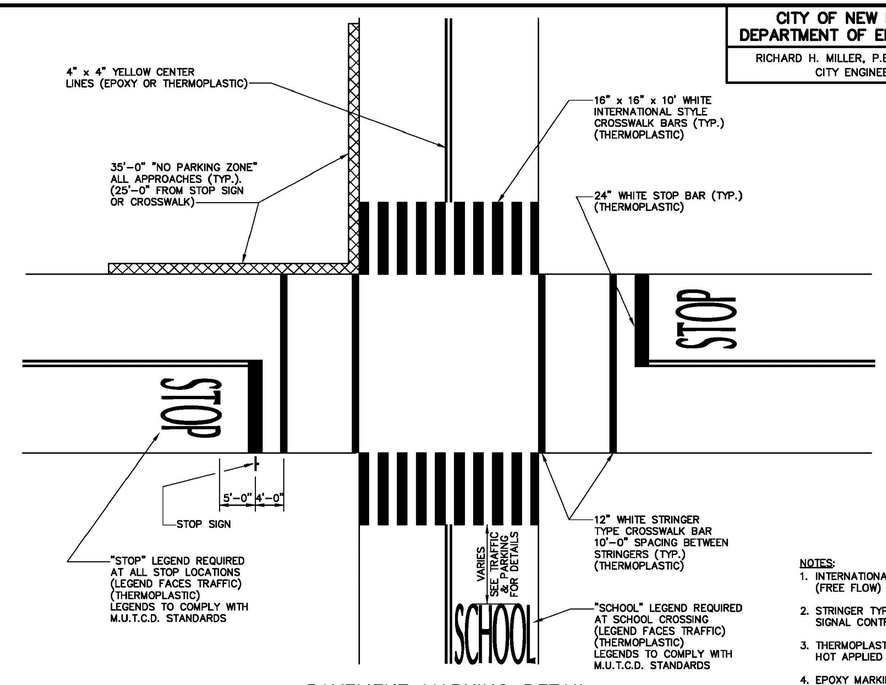
DATE: DEC. 1 2009
DRAWING NO.: STD–NH–29



NOTES:
1. INTERNATIONAL STYLE BARS USED ON OPEN (FREE FLOW) ROADWAY LEGS ONLY.
2. STRINGER TYPE BARS USED AT ALL STOP OR SIGNAL CONTROLLED ROADWAY LEGS.
3. THERMOPLASTIC MARKINGS, MINIMUM 90 MIL. HOT APPLIED MATERIAL PER SPECIFICATION.
4. EPOXY MARKINGS, MINIMUM 15 MIL. PER SPECIFICATION.

PAVEMENT MARKING DETAIL

SCALE: 1"=10'–0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE:

GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
260 East Street
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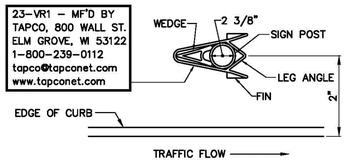
GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
ORCHARD STREET AREA
SEWER SEPARATION PROJECT

dtc
DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 WHITNEY AVENUE
HAMDEN CT 06518
203 239 4200 203 234 7376 FAX

CITY OF NEW HAVEN
STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 41

23–VR1 – MF'D BY
TAPCO, 800 WALL ST.
ELM GROVE, WI 53122
1–800–239–0112
tapco@tapconet.com
www.tapconet.com



VLOC SOCKET SYSTEM

N.T.S.

NOTE:
CONTRACTOR SHALL SUPPLY TO THE CITY OF NEW HAVEN ONE 24 FOOT LENGHT OF 2–3/8" O.D. SCHEDULE 40 GALVANIZED STEEL PIPE FOR EACH TWO (OR PART THEREOF) V–LOCS INSTALLED.

CITY OF NEW HAVEN
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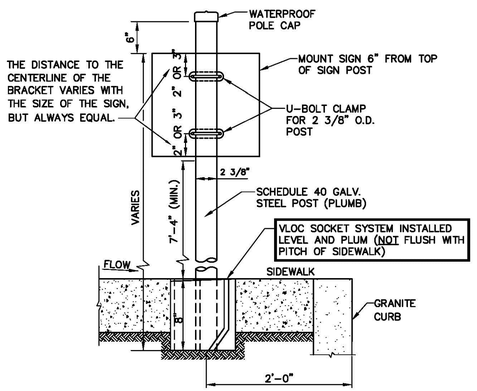
DATE: DEC. 1, 2009
DRAWING NO.: STD–NH–25



VLOC AND SIGN POST DETAIL

N.T.S.

CITY OF NEW HAVEN
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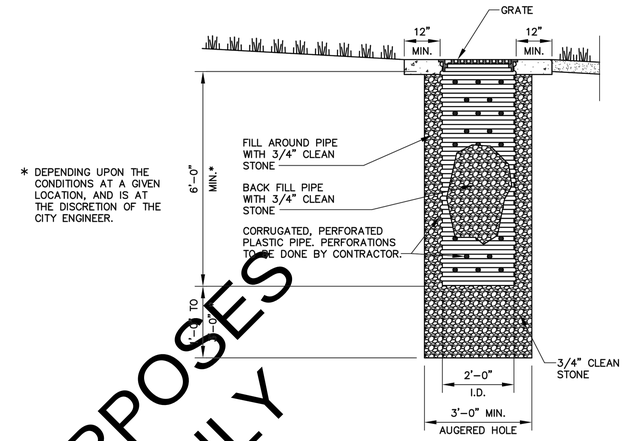
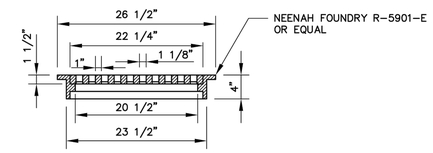
DRIVE: K:\ENGINEER\DWG
FILE: CITYSTD\DETAILS\2013 DETAILS
DATE: JUNE 24, 2013
DRAWING NO.: STD–NH–37B



CORRUGATED PERFORATED PIPE DRYWELL WITH GRATE

SCALE: 1/2"=1'–0"



CORRUGATED PIPE GRATE

NOTE:
SURROUNDING SOIL CONDIOTIONS MUST BE CAPABLE OF DRIANING AREA BEING COLLECTED.

NOT FOR BIDDING PURPOSES
REFERENCE COPY ONLY

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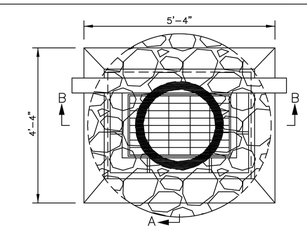
DEPARTMENT OF ENGINEERING
GIOVANNI ZINN, P.E.
CITY ENGINEER

DRIVE: ENGINEERING
FILE: STANDARD DETAILS\2021
DATE: APRIL 2021
DRAWING NO.: STD–NH–37

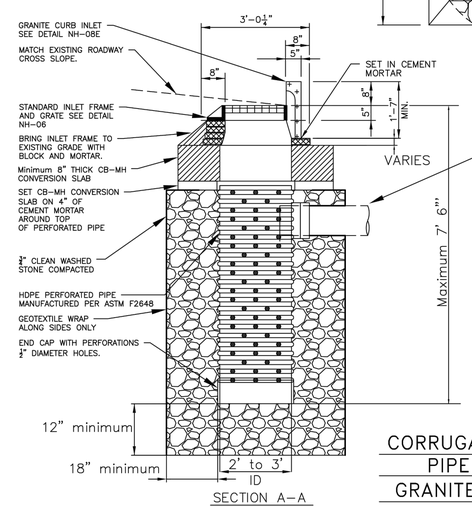
NOTE:
SURROUNDING SOIL CONDITIONS MUST BE CAPABLE OF DRAINING AREA BEING COLLECTED.

DRY WELL DEPTH SHALL NOT BE GREATER THAN 8'

RESTORE SIDEWALK AND ROADWAY AROUND INLET TO CITY STANDARDS PER DIRECTION OF CITY ENGINEER.



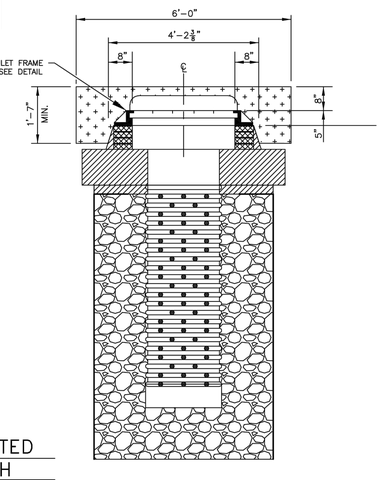
PLAN



SECTION A–A

CORRUGATED PERFORATED PIPE DRYWELL WITH GRANITE CURB INLET TOP

SCALE: 1/2"=1'–0"



SECTION B–B

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
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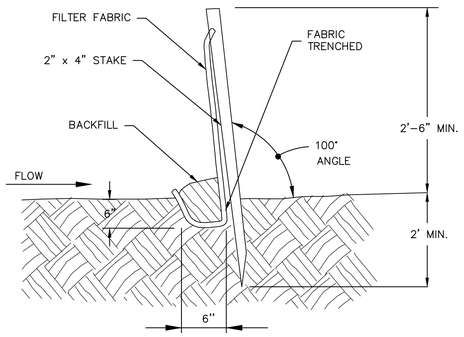
CITY OF NEW HAVEN STANDARD DETAILS

PROJECT NO. CWF 2019–05
FILE NAME:
SHEET NO. 42

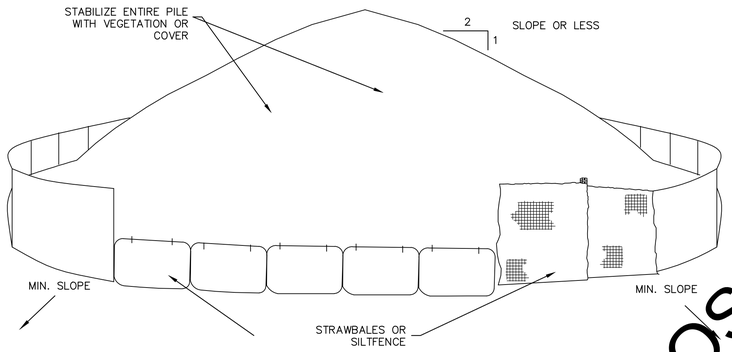


A) MINIMUM LENGTH OF SILT FENCE IS 15 L.F.
B) MAXIMUM POST SPACING IS 8'-0"
C) JOINTS ONLY AT SUPPORT POST WITH MINIMUM 2' OVERLAP, SECURELY SEALED
D) SEDIMENTATION DEPOSITS SHALL BE REMOVED WHEN THEY REACH 1/2 THE HEIGHT OF THE SILT FENCE
E) SILT FENCE SHALL NOT BE USED IN A WATER COURSE
F) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS, AND WHEN DIRECTED BY THE ENGINEER, FENCE WILL BE REMOVED AND ANY SEDIMENTATION WILL BE THINLY SPREAD UPON EXISTING GROUND COVER
G) ADDITIONAL SILT FENCE SHALL BE ADDED AS SITE CONDITIONS REQUIRE.
H) PERPENDICULAR SILT FENCE WINGS MUST BE INSTALLED AT THE FOLLOWING INTERVALS TO REDUCE WATER VELOCITY ALONG THE FACE OF THE SILT FENCE: (SEE 2002 DEP GUIDELINES)

SLOPE STEEPNESS	SLOPE LENGTH & WING SPACING
5:1 OR FLATTER	100 FEET
3:1 TO 5:1	75 FEET
2:1 TO 3:1	50 FEET

SILT FENCE

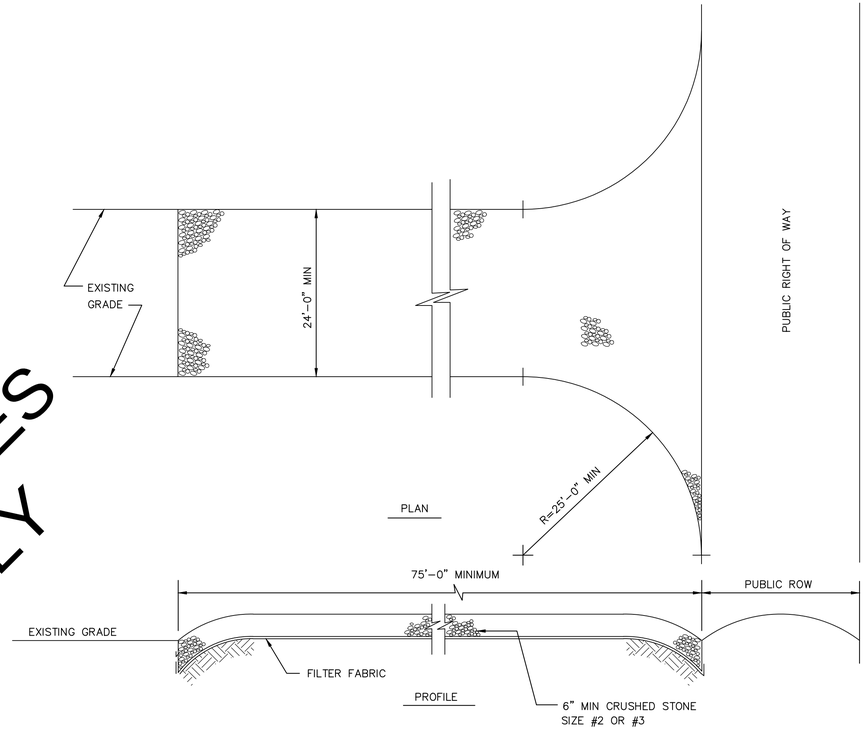
NTS



INSTALLATION NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

SOIL STOCKPILE AREA

NTS



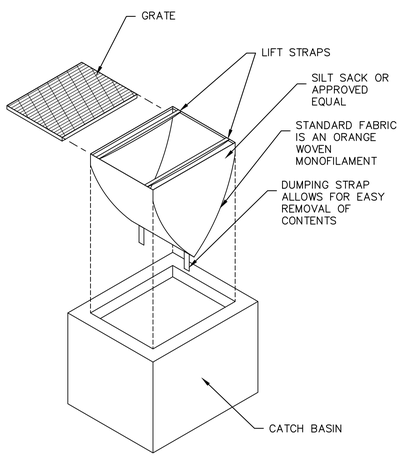
NOTES:

1. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

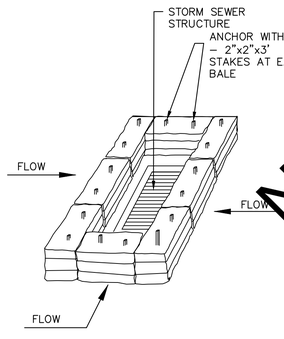
2. CONTRACTOR SHALL PROVIDE WATER AND HOSE TO WASHDOWN TRUCKS PRIOR TO LEAVING THE SITE. WASHDOWN SHALL REMOVE ALL MUD AND DEBRIS FROM THE EXTERIOR OF CONSTRUCTION TRUCKS AND TRUCK TIRES.

TEMPORARY CONSTRUCTION ENTRANCE

NTS



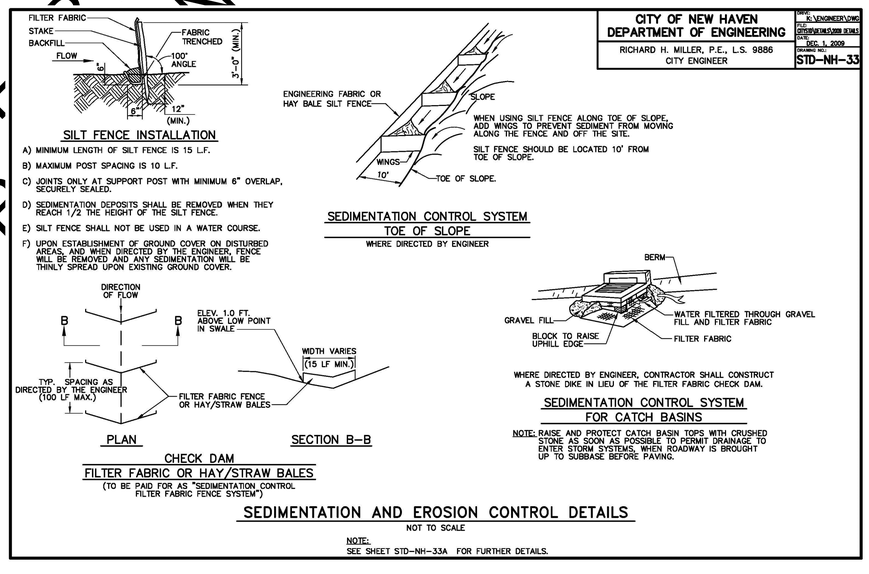
SILT SACK INSTALLATION AT CATCH BASIN INLET PROTECTION IN IMPERVIOUS AREA



HAY BALE INSTALLATION AT CATCH BASIN INLET PROTECTION IN PERVIOUS AREA

INLET PROTECTION

NTS



SEDIMENTATION AND EROSION CONTROL DETAILS

NOT TO SCALE

NOTE:
SEE SHEET STD-NH-33A FOR FURTHER DETAILS.

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ORCHARD STREET AREA
SEWER SEPARATION PROJECT

DIVERSIFIED TECHNOLOGY CONSULTANTS
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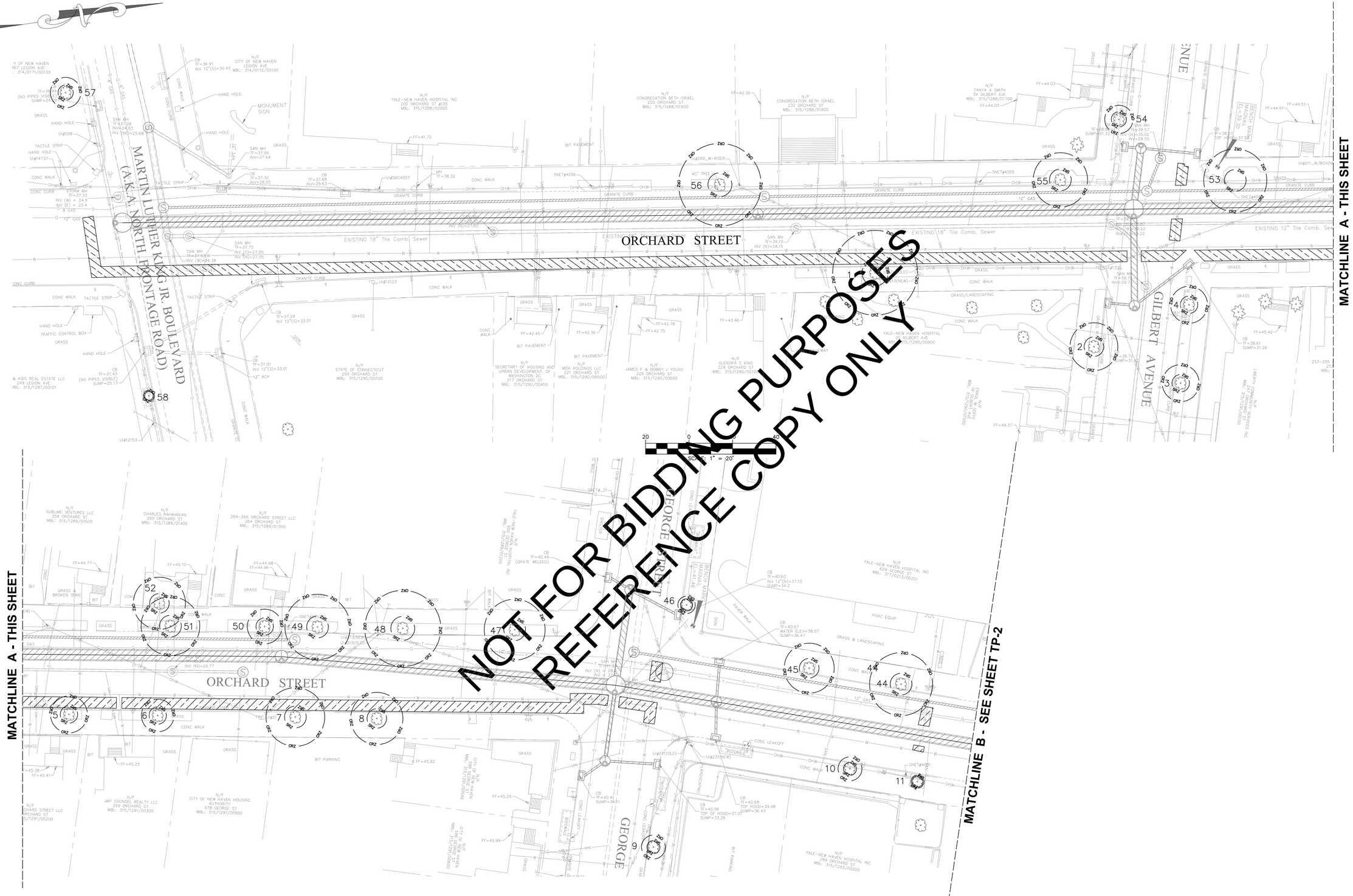
MISCELLANEOUS DETAILS

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 43



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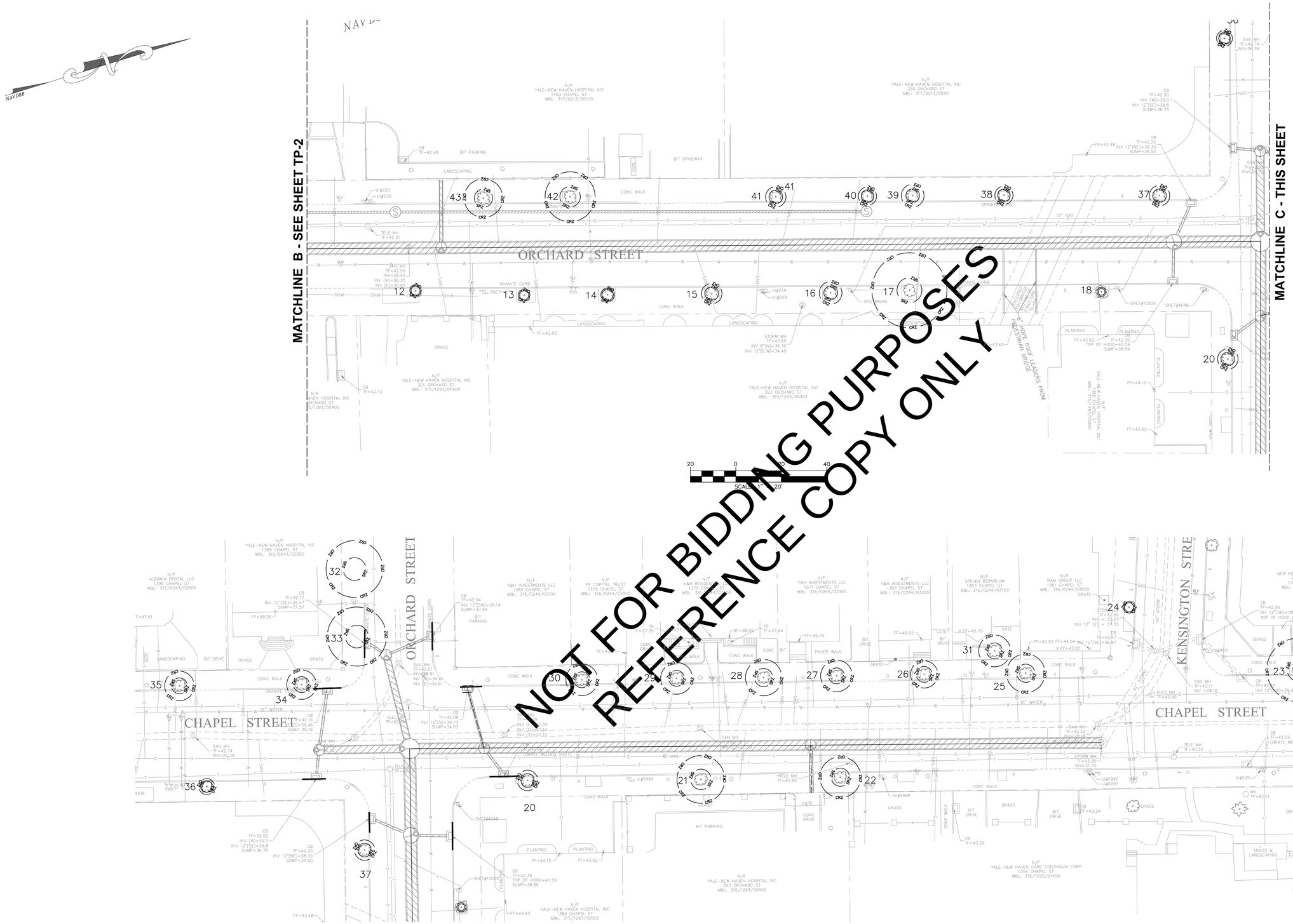
TREE PROTECTION
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO.
44



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TREE PROTECTION
ORCHARD AND CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 45

Tree #	Common Name	Latin Name	DBH	SCRZ (ft)	CRZ (ft)	Condition	Defects	Recommendations	Notes	Tree #	Common Name	Latin Name
1	London planetree	Platanus acerifolia	39	12	39	Fair	Deadwood. Hangers. Prior broken limbs.	Prune deadwood		1	London planetree	Platanus acerifolia
2	Littleleaf linden	Tilia cordata	22	9	22	Fair	Broken top. Deadwood. Dieback. Near wires	Prune deadwood		2	Littleleaf linden	Tilia cordata
3	Norway maple	Acer platanoides	17	8	17	Poor	Topped. Dieback.	Prune deadwood		3	Norway maple	Acer platanoides
4	Littleleaf linden	Tilia cordata	17	8	17	Fair	Over wires. Leans. Small deadwood	None	None	4	Littleleaf linden	Tilia cordata
5	Littleleaf linden	Tilia cordata	17	8	17	Fair	Canopy in wires. Sidewalk lifting. Small deadwood	Reduce from wires	None	5	Littleleaf linden	Tilia cordata
6	Norway maple	Acer platanoides	15	8	15	Fair	Small deadwood. Decay at pruning wounds	None		6	Norway maple	Acer platanoides
7	London planetree	Platanus acerifolia	27	10	27	Good	Sidewalk cracking and lifting. Small deadwood	None		7	London planetree	Platanus acerifolia
8	Pin oak	Quercus palustris	24	9	24	Good	Sidewalk cracking and lifting. Small deadwood. Canopy near building	Clear from building		8	Pin oak	Quercus palustris
9	Red maple	Acer rubrum	11	6	11	Good	CIRCLE	Reduce from wires		9	Red maple	Acer rubrum
10	Red maple	Acer rubrum	11	6	11	Good	Canopy near wires	Reduce from wires		10	Red maple	Acer rubrum
11	Callery pear	Pyrus calleryanna	6	5	6	Good	Canopy near wires	Reduce from wires		11	Callery pear	Pyrus calleryanna
12	Callery pear	Pyrus calleryanna	5	4	5	Good	Canopy near wires	Reduce from wires		12	Callery pear	Pyrus calleryanna
13	Callery pear	Pyrus calleryanna	5	4	5	Good	Canopy near wires	Reduce from wires		13	Callery pear	Pyrus calleryanna
14	Callery pear	Pyrus calleryanna	6	5	6	Good	Canopy near wires	Reduce from wires		14	Callery pear	Pyrus calleryanna
15	Pin oak	Quercus palustris	9	6	9	Fair	Canopy near wires. Topped	Maintain wire clearance	Poor location for species. Remove and replace with more appropriate species an option	15	Pin oak	Quercus palustris
16	Pin oak	Quercus palustris	10	6	10	Fair	Canopy near wires. Topped	Maintain wire clearance	Poor location for species. Remove and replace with more appropriate species an option	16	Pin oak	Quercus palustris
17	London planetree	Platanus acerifolia	33	11	33	Poor	Very large dead limb over road. Basal decay on road side; likely impacted by prior road work. Dieback	Remove		17	London planetree	Platanus acerifolia
18	Callery pear	Pyrus calleryanna	4	3	4	Good	Canopy near wires	Reduce from wires		18	Callery pear	Pyrus calleryanna
19	Callery pear	Pyrus calleryanna	4	3	4	Good	Canopy near wires	Reduce from wires		19	Callery pear	Pyrus calleryanna
20	Ginkgo	Ginkgo biloba	9	6	9	Poor	Dead top. Dieback	Remove		20	Ginkgo	Ginkgo biloba
21	Pin oak	Quercus palustris	21	9	21	Fair	Topped by utility. Sidewalk lifting	None		21	Pin oak	Quercus palustris
22	Pin oak	Quercus palustris	18	8	18	Fair	Topped by utility. Sidewalk lifting. Deadwood	Prune deadwood		22	Pin oak	Quercus palustris
23	American elm	Ulmus americana	28	10	28	Fair	Leans over road. Wounds from trucks on trunk. Deadwood. Basal wound	Prune deadwood. Reduce canopy		23	American elm	Ulmus americana
24	Red oak	Quercus rubra	5	4	5	Good	None	None		24	Red oak	Quercus rubra
25	Elm cultivar	Ulmus spp	17	8	17	Good	Codominant. Small deadwood	None		25	Elm cultivar	Ulmus spp
26	Ginkgo	Ginkgo biloba	12	7	12	Fair	Self correcting lean.	None		26	Ginkgo	Ginkgo biloba
27	Ginkgo	Ginkgo biloba	14	7	14	Fair	Slight lean. Calloused wound at 3 feet. Small deadwood	None		27	Ginkgo	Ginkgo biloba
28	Elm cultivar	Ulmus spp	16	8	16	Good	Codominant. Deadwood	Prune deadwood		28	Elm cultivar	Ulmus spp
29	Honeylocust	Gleditsia triacanthos	14	7	14	Good	Small deadwood. Girdling roots. Sidewalk lifting. Roots grow over curb	None		29	Honeylocust	Gleditsia triacanthos
30	Ginkgo	Ginkgo biloba	14	7	14	Fair	Calloused wound on road side base. Small deadwood	None		30	Ginkgo	Ginkgo biloba
31	Kwanzan cherry	Prunus serrulata "Kwanzan'	14	7	14	Fair	Small deadwood	None	On private property	31	Kwanzan cherry	Prunus serrulata "Kwanzan'
32	Pin oak	Quercus palustris	25	10	25	Fair	Slight lean over road. Small deadwood. Calloused wound near base	None		32	Pin oak	Quercus palustris
33	Pin oak	Quercus palustris	26	10	26	Fair	Calloused wound with decay fungi near base. Deadwood	Prune deadwood. Monitor		33	Pin oak	Quercus palustris
34	Ginkgo	Ginkgo biloba	13	7	13	Fair	Dieback. Self correcting lean.	Prune deadwood		34	Ginkgo	Ginkgo biloba
35	Ginkgo	Ginkgo biloba	13	7	13	Poor	Dieback. Deadwood. Calloused wound near base	Prune deadwood		35	Ginkgo	Ginkgo biloba
36	Pin oak	Quercus palustris	7	5	7	Fair	Broken top.	None		36	Pin oak	Quercus palustris
37	Pin oak	Quercus palustris	9	6	9	Good	Calloused wound on lower trunk. Small deadwood. Canopy against building	Reduce from building		37	Pin oak	Quercus palustris
38	Pin oak	Quercus palustris	8	5.5	8	Good	Canopy against building	Reduce from building		38	Pin oak	Quercus palustris
39	Pin oak	Quercus palustris	10	6	10	Fair	Calloused wound at base. Self correcting lean. Small deadwood	Prune deadwood		39	Pin oak	Quercus palustris
40	Pin oak	Quercus palustris	8	5.5	8	Good	Canopy against building	Reduce from building		40	Pin oak	Quercus palustris
41	Pin oak	Quercus palustris	9	6	9	Good	Canopy against building	Reduce from building		41	Pin oak	Quercus palustris
42	Pin oak	Quercus palustris	22	9	22	Good	Small deadwood	None		42	Pin oak	Quercus palustris
43	Pin oak	Quercus palustris	17	8	17	Poor	Very large deadwood. Significant dieback. Little canopy remains	Remove		43	Pin oak	Quercus palustris
44	Scarlet oak	Quercus coccinea	29	10	29	Fair	Basal wound with internal decay. Large deadwood. Dieback	Prune deadwood		44	Scarlet oak	Quercus coccinea
45	Scarlet oak	Quercus coccinea	23	9	23	Fair	Basal wound with significant internal decay.	Prune deadwood. Reduce canopy	Removal should be considered	45	Scarlet oak	Quercus coccinea
46	Callery pear	Pyrus calleryanna	8	5.5	8	Good	Canopy blocks road name sign and near wires	None	Poor location for tree	46	Callery pear	Pyrus calleryanna
47	Pin oak	Quercus palustris	28	10	28	Fair	Decay fungi conks at base. Deadwood	Prune deadwood.		47	Pin oak	Quercus palustris
48	London planetree	Platanus acerifolia	35	11	35	Fair	Deadwood. Callused wound on buttress root	Prune deadwood.		48	London planetree	Platanus acerifolia
49	London planetree	Platanus acerifolia	30	10	30	Fair	Deadwood	Prune deadwood.		49	London planetree	Platanus acerifolia
50	Norway maple	Acer platanoides	16	8	16	Fair	Leans parallel to road. Canopy near wires. Deadwood	Prune deadwood.		50	Norway maple	Acer platanoides
51	Pin oak	Quercus palustris	27	10	27	Fair	Large deadwood	Prune deadwood.		51	Pin oak	Quercus palustris
52	Pin oak	Quercus palustris	24	9	24	Fair	Deadwood	Prune deadwood.	On private property	52	Pin oak	Quercus palustris
53	Pin oak	Quercus palustris	29	10	29	Fair	Calloused wound on buttress root. Canopy near wires. Deadwood.	Prune deadwood. Elevate over wires		53	Pin oak	Quercus palustris
54	Littleleaf linden	Tilia cordata	13	7	13	Fair	Canopy in wires. Cavity at 3 feet with moderate decay.	Maintain clearance from wires	Poor location for species	54	Littleleaf linden	Tilia cordata
55	Pin oak	Quercus palustris	25	10	25	Good	Small deadwood	None		55	Pin oak	Quercus palustris
56	London planetree	Platanus acerifolia	38	11	38	Fair	Deadwood. Prior broken branches	Prune deadwood		56	London planetree	Platanus acerifolia
57	Green ash	Fraxinus pennsylvanica	14	7	14	Poor	Emerald ash borer	Remove		57	Green ash	Fraxinus pennsylvanica
58	Purple leaf plum	Prunus cerasifera	5	4	5	Fair	Black knot disease	Sanitation prune	Decline likely as disease is difficult to eradicate. Entire row same species	58	Purple leaf plum	Prunus cerasifera

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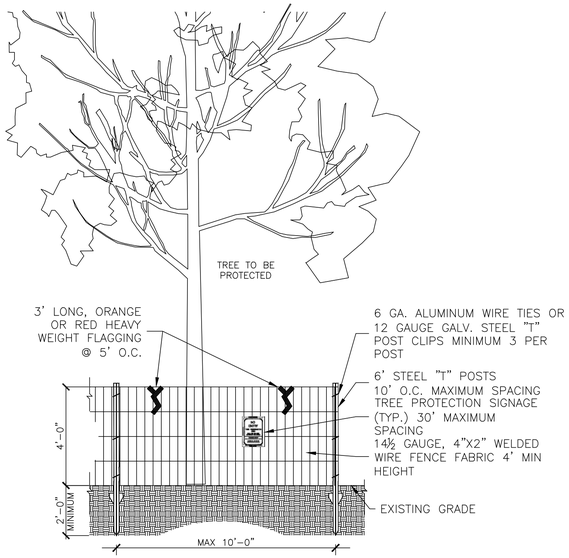
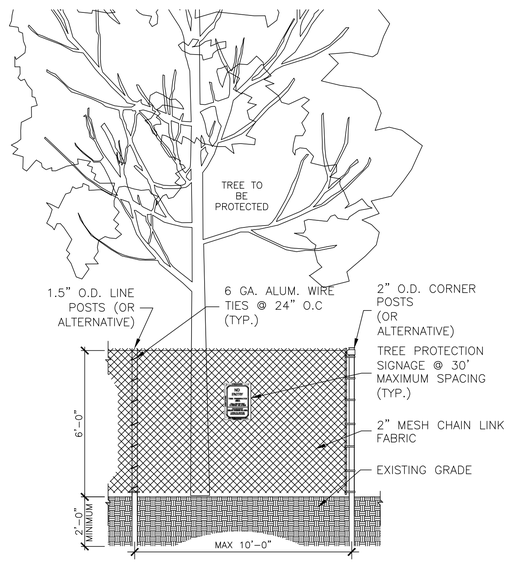
TREE PROTECTION TABLE
ORCHARD STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 46



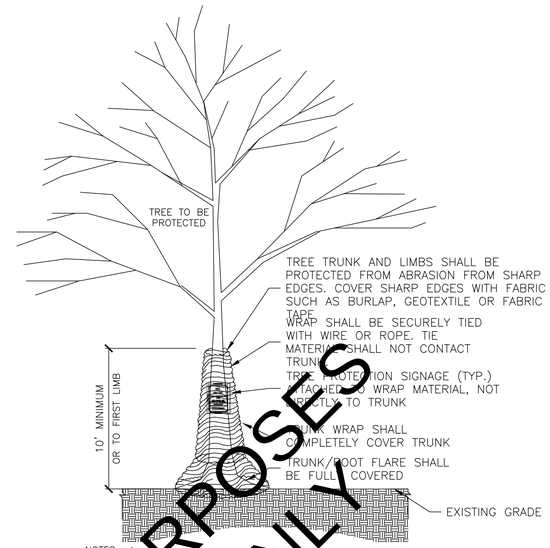
NOTES:
1. TREE PROTECTION FENCE SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION.
2. WHERE REQUIRED, SUPER SILT FENCE MAY BE USED IN LIEU OF WELDED WIRE FOR TREE PROTECTION PROVIDED IT IS INSTALLED AND MAINTAINED AS A TREE PROTECTION MEASURE AND IS POSTED WITH TREE PROTECTION SIGNS.
3. TREE PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. REMOVE FENCE ONLY WITH APPROVAL AND AFTER ALL SITE WORK HAS BEEN COMPLETED.

1 WELDED WIRE TREE PROTECTION FENCE (TYPICAL)
TP-4 Sheet 47 SCALE: NTS



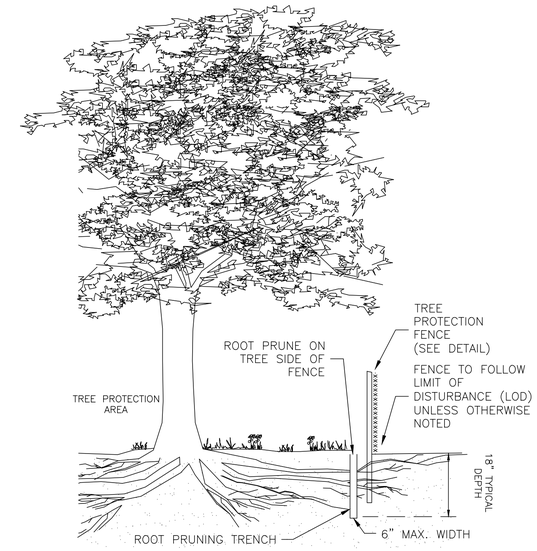
NOTES:
1. TREE PROTECTION FENCE SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION.
2. SUPER SILT FENCE MAY BE USED IN LIEU OF WELDED WIRE FOR TREE PROTECTION PROVIDED IT IS INSTALLED AND MAINTAINED AS A TREE PROTECTION MEASURE AND IS POSTED WITH TREE PROTECTION SIGNS.
3. TREE PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. REMOVE FENCE ONLY WITH APPROVAL AND AFTER ALL SITE WORK HAS BEEN COMPLETED.

2 CHAIN LINK TREE PROTECTION FENCE (TYPICAL)
TP-4 Sheet 47 SCALE: NTS



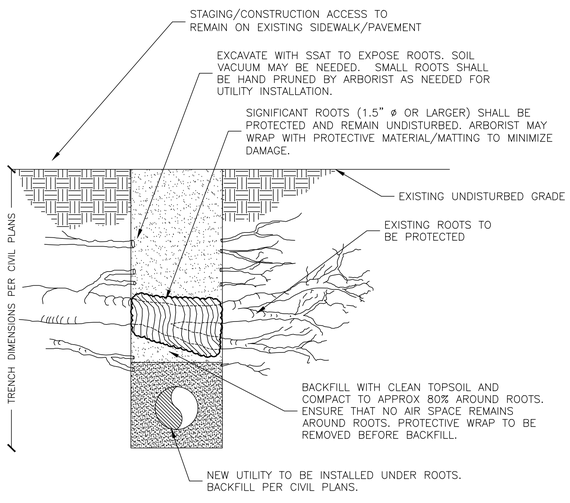
NOTES:
1. TRUNK WRAP MATERIAL SHALL BE DOUBLE SIDED GEOCOMPOSITE, GEONET CORE WITH NON-WOVEN COVERING (MIRAFI TENAX TENDRAIN 770/2) OR EQUIVALENT.
2. WRAP SHALL BE INSTALLED BY A CERTIFIED ARBORIST.
3. WRAP SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION.
4. WRAP SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. REMOVE WRAP ONLY WITH APPROVAL AND AFTER ALL SITE WORK HAS BEEN COMPLETED.
5. WRAP SHALL BE REMOVED PROMPTLY AFTER CONSTRUCTION.
6. MAJOR SCAFFOLD LIMBS MAY ALSO REQUIRE THIS PROTECTION AS DIRECTED BY THE PROJECT ARBORIST.

3 TREE TRUNK & LIMB PROTECTION WRAP (TYP)
TP-4 Sheet 47 SCALE: NTS



NOTES:
1. TREE PROTECTION AREA WILL BE DETERMINED AS PART OF THE PLAN REVIEW PROCESS. EXACT LOCATION, DEPTH AND METHODS OF ROOT PRUNING TO BE DETERMINED IN THE FIELD BY PROJECT ARBORIST.
2. EXACT LOCATION OF TREE PROTECTION AREAS SHALL BE STAKED OR FLAGGED PRIOR TO TRENCHING.
3. TRENCH SHOULD BE BACKFILLED IMMEDIATELY OR INCORPORATED WITH SILT FENCE INSTALLATION.
4. ROOTS SHOULD BE SEVERED BY TRENCHER, VIBRATORY PLOW OR APPROVED EQUIVALENT. ROOTS OVER 1.5" DIAMETER SHOULD BE CLEANLY CUT BY HAND. ROOT PRUNING ADJACENT TO SPECIMEN TREES MAY REQUIRE SOIL REMOVAL BY SUPERSONIC AIR TOOL TO MINIMIZE TREE AND ROOT IMPACTS.

4 ROOT PRUNING (TYPICAL)
TP-4 Sheet 47 SCALE: NTS



NOTES:
1. *TREE LOCATIONS MAY BE APPROXIMATE. OWNER AND CONTRACT ARBORIST SHALL VERIFY ALL TREE LOCATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND/OR TREATMENT OR REMOVAL.*
2. *PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO COMMENCEMENT OF DEMOLITION/CONSTRUCTION ACTIVITY. OWNER, DESIGN TEAM MEMBERS (PROJECT ARBORIST, LANDSCAPE ARCHITECT, ENGINEER AND ARCHITECT), CONTRACT ARBORIST, SITE AND LANDSCAPE CONTRACTORS SHALL ATTEND.*
3. *THE INSPECTION OF THESE TREES CONSISTED SOLELY OF A VISUAL INSPECTION FROM THE GROUND. WHILE MORE THOROUGH TECHNIQUES ARE AVAILABLE FOR INSPECTION AND EVALUATION, THEY WERE NEITHER REQUESTED NOR CONSIDERED NECESSARY OR APPROPRIATE AT THIS TIME.*
4. *TREES RATED "POOR" OR "DEAD" THAT ARE NOT RECOMMENDED FOR REMOVAL DUE TO CONSTRUCTION IMPACT MAY WARRANT FURTHER EVALUATION AND/OR TREATMENT OR REMOVAL.*

5 / 74 ROOT PROTECTION IN UTILITY TRENCH
SCALE: NTS

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TREE PROTECTION DETAILS
ORCHARD AND CHAPEL STREET

PROJECT NO. CWF 2019-05
FILE NAME:
SHEET NO. 47