CONNECTICUT DEPARTMENT OF TRANSPORTATION

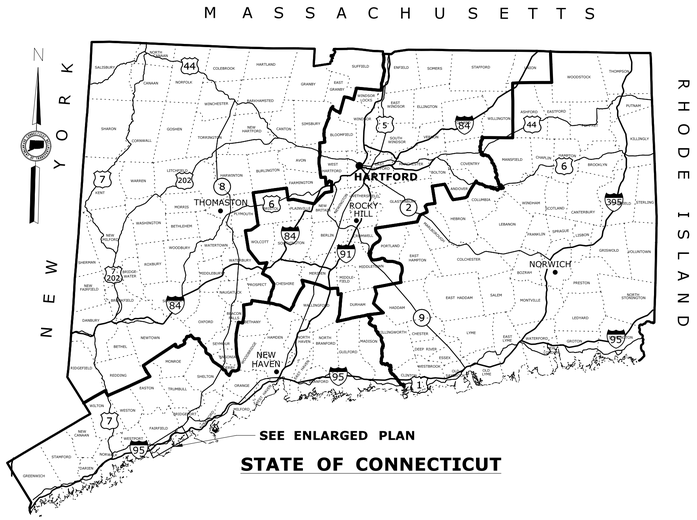
Plans For

NETWORK INFRASTRUCTURE UPGRADE FOR SECURITY NEW HAVEN LINE PHASE 2

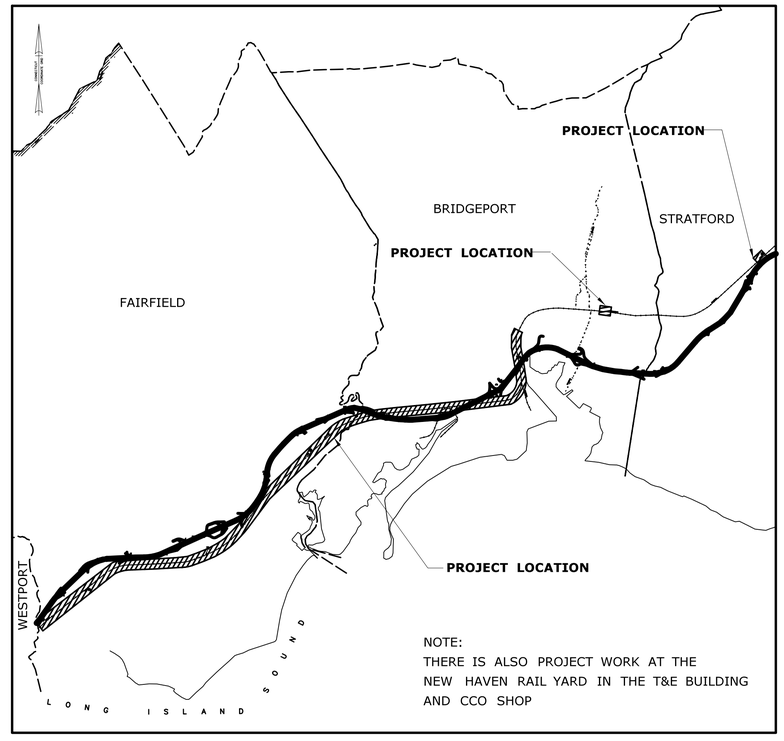
Town(s)/City of

WESTPORT TO STRATFORD

FINAL DESIGN PLANS



STATE OF CONNECTICUT



NOTE:
THERE IS ALSO PROJECT WORK AT THE NEW HAVEN RAIL YARD IN THE T&E BUILDING AND CCO SHOP

LOCATION PLAN

NOT TO SCALE

GENERAL NOTES:

1. FEDERAL AID PROJECT NO.
2. F.H.W.A. REGION NO. 1
3. CONSTRUCTION SPECIFICATIONS:
   Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, dated 2004; Supplemental Specifications, dated July 2015; and Special Provisions
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM SYSTEM N.A.D. 1927 N.A.D. 1983
5. VERTICAL DATUM BASED ON NGVD OF 1929 NAVD 1988

DISCLAIMER

IT IS THE RESPONSIBILITY OF EACH BIDDER AND ALL OTHER INTERESTED PARTIES TO OBTAIN ALL BIDDING RELATED INFORMATION AND DOCUMENTS FROM OFFICIAL SOURCES WITHIN THE DEPARTMENT.

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LIST OF SUBSETS

SUBSET NO.	SUBSET TITLE	*SUBSET SHEET COUNT
01	GENERAL	3
02	REVISIONS	1
03	AERIAL CABLE ROUTING	62
04	STRUCTURAL DETAILS	31
05	STATIONS, PECK BRIDGE AND HEAD-END	45
06	SCHEMATICS AND OTHER DETAILS	31
07	FOR INFORMATION ONLY	2

*THE INITIAL SUBSET SHEET COUNT DOES NOT INCLUDE ADDENDUMS AND CHANGE ORDERS

LIST OF DRAWINGS
SUBSET 01 - GENERAL

DRAWING TITLE	DRAWING NO.
TITLE SHEET	G-001
GENERAL NOTES	G-002
ABBREVIATION & LEGEND	G-003

STANDARD CONVENTIONS

North Arrow W/No. Coor.
Grid Arrow
Edge Of Road
Concrete Pavement
Dirt Road
B.C.L.C.
Granite Curb
Guide Rail
Concrete Median Barrier
Bit. Walk
Conc. Sidewalk
Railroad Tracks
Limit Of Marsh
Stone Wall
Ledge Outcrop
Inland Wetland Limits
STATE LINE
Power Line
Swamp
Building
Transmission Tower
Chain Link Fence
Rustic Fence
Pipe Fence
Board Fence
Water Edge
Stream
Ditch
TOWN LINE
Riprap
Hedge Row
Tree Line
Shrub
Evergreen Tree
Deciduous Tree
Retaining Wall
Highway Line
Street Line
Property Line
Lot Line
Easement Line

THE DESIGN APPEARS TO CONFORM TO APPLICABLE CRITERIA. APPROVAL IS NOT TO BE CONSTRUED TO MEAN THAT ALL ASPECTS OF THE DESIGN HAVE BEEN PERSONALLY CHECKED BY THE UNDERSIGNED.

STV 100 Years

STV INCORPORATED
185 PLAINS ROAD, SUITE 208E
MILFORD, CT 06461

STATE OF CONNECTICUT · JAMES E. SHERWONIT · #12175 · REGISTERED PROFESSIONAL ENGINEER

James Sherwonit
I am approving this document
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Plans For
NETWORK INFRASTRUCTURE
UPGRADE FOR SECURITY
NEW HAVEN LINE
PHASE 2
Town(s)/City
WESTPORT
TO
STRATFORD

STATE PROJECT NO.
0300-0178

DRAWING NO.
G-001

SHEET NO.
01.01

GENERAL NOTES:

1. ALL MATERIALS SHALL BE NEW AND CONFORM TO CTDOT FORM 816, CONTRACT SPECIFICATIONS, DRAWINGS, THE LATEST NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, AND ALL APPLICABLE LOCAL CODES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION OVER THE WORK.
2. THE CONTRACTOR SHALL EXAMINE ALL CONTRACT DRAWINGS AND SPECIFICATIONS AND BE RESPONSIBLE FOR THE PROPER FITTING OF MATERIALS AND EQUIPMENT AT EACH LOCATION AS INDICATED. CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL, OR PERFORMING ANY WORK. NOTIFY THE ENGINEER OF ANY CONDITIONS OR DIMENSIONS WHICH WOULD AFFECT THE PERFORMANCE OF WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS PRIOR TO PERFORMING THE WORK.
3. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. ADDITIONAL OFFSETS, FITTINGS, AND ACCESSORIES MAY BE REQUIRED TO MEET SUCH CONDITIONS AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO CTDOT.
4. ALL EQUIPMENT SHALL BE INSTALLED TO PERMIT EASY ACCESS FOR OPERATION AND MAINTENANCE.
5. CAUTION SHOULD BE EXERCISED TO PREVENT DAMAGE WHEN WORKING ADJACENT TO EXISTING INFRASTRUCTURE. EXISTING SURFACES (INCLUDING WALLS AND CEILINGS) DAMAGED OR EXPOSED BY THE CONTRACTOR'S WORK SHALL BE PATCHED OR REPAIRED WITH MATERIALS AND FINISHES TO MATCH EXISTING ADJACENT SURFACES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ANY TEMPORARY LIGHTING AND/OR POWER REQUIRED DURING CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES TO PREVENT SCHEDULING, SEQUENCING, DIMENSIONAL, AND OTHER CONFLICTS AND OMISSIONS.
8. CONTRACTOR SHALL SUBMIT COMPLETE BILL OF MATERIALS PRIOR TO ORDERING AND START OF WORK. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL WORK FOR APPROVAL PRIOR TO INSTALLATION.
9. AFTER COMPLETION OF WORK SUBMIT AS-BUILT DRAWINGS TO THE ENGINEER. AS-BUILT DRAWINGS SHALL BE BOTH HARD COPY FORMAT AND APPROVED ELECTRONIC FORMAT. CONTRACTOR SHALL MAINTAIN A MASTER REDLINED DRAWING SET THROUGHOUT CONSTRUCTION AND SHALL BE MADE AVAILABLE TO THE ENGINEER UPON REQUEST.
10. CONTRACTOR SHALL COORDINATE WORK WITH OTHER PROJECTS IN THE AREA. SUCH PROJECTS INCLUDE, BUT ARE NOT LIMITED TO:
    a. BRIDGEPORT RAILROAD STATION IMPROVEMENTS
    b. CATENARY REPLACEMENT SECTIONS C-1A & C-2 NEW HAVEN LINE
11. FINISHED WORK SHALL NOT ENCROACH ON THE TRAIN'S DYNAMIC ENVELOPE. ALL EQUIPMENT, MATERIALS, AND OTHER APPARATUS MOUNTED ADJACENT TO TRACK SHALL ALLOW FOR A MINIMUM 2" CLEARANCE OUTSIDE OF THE DYNAMIC ENVELOPE OF THE RAIL CARS AND TRACK MAINTENANCE EQUIPMENT.
12. THE CONTRACTOR IS RESPONSIBLE FOR ALL SITE SAFETY AND SECURITY MEASURES FOR THE DURATION OF THE CONSTRUCTION ACTIVITIES. ALL SAFETY MEASURES SHALL CONFORM TO ALL LOCAL, STATE, FEDERAL, AND RAILROAD REGULATORY GUIDELINES.
13. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A DETAILED INVENTORY OF ALL EQUIPMENT TO BE REMOVED. THE ENGINEER SHALL IDENTIFY TO THE CONTRACTOR ALL ITEMS BEING REMOVED THAT SHALL BE RETURNED TO OWNER. ALL OTHER MATERIALS SHALL BE RECYCLED (IF AVAILABLE) OR PROPERLY DISPOSED OF. EXISTING MATERIALS REMOVED UNDER THIS CONTRACT SHALL NOT BE REUSED IN NEW SYSTEMS EXCEPT WHERE INDICATED AS BEING RELOCATED.
14. CONTRACTOR SHALL MAINTAIN ALL ADA ACCESSIBLE PATHS THROUGHOUT CONSTRUCTION. ALL PUBLIC ACCESS DETOURS ARE SUBJECT TO APPROVAL BY THE ENGINEER, MNR, CTDOT, AND THE STATION OWNER/OPERATOR.
15. THE CONTRACTOR SHALL FOLLOW ALL MNR, CTDOT, AND NESC STANDARDS AND REQUIREMENTS WHILE PERFORMING THE WORK DESCRIBED IN THE PLANS AND SPECIFICATIONS. THE REQUIREMENTS INCLUDE BUT ARE NOT LIMITED TO THE REQUIRED NOTIFICATIONS, FLAGGERS, AND SAFETY PRECAUTIONS FOR PASSENGERS AND WORKERS AT THE PECK BRIDGE, STATIONS AND ALONG THE RIGHT OF WAY.
16. CONTRACTOR SHALL TRIM/CLEAR ALL VEGETATION AT ALL STRUCTURES AND BETWEEN ALL STRUCTURES AS REQUIRED FOR THE UNOBSTRUCTED INSTALLATION OF CONDUITS AND CABLES. ALL DEBRIS SHALL BE REMOVED FROM RAILROAD PROPERTY AND DISPOSED OF PROPERLY. ALL WORK TO BE PAID FOR WITH ITEM "CLEARING AND GRUBBING". "CLEARING AND GRUBBING" SHALL INCLUDE REMOVAL OF OLD CONCRETE FOOTINGS AND RAILROAD DEBRIS WITHIN THE FOOTPRINT OF THE PROPOSED UNDERGROUND WORK AND SURROUNDING AREA THAT INTERFERES WITH THE CONTRACTOR'S ABILITY TO PERFORM THE WORK.
17. STONE BALLAST REQUIRED TO GRADE OR FILL IN AREAS ALONG THE BOXES OR VAULTS INSTALLED SHALL BE PAID FOR UNDER CONTRACT BID ITEM "STONE BALLAST".
18. IT IS THE CONTRACTOR'S RESPONSIBILITY TO KEEP HIS EQUIPMENT, MATERIALS, PERSONNEL, AND PROPOSED CONSTRUCTION WITHIN THE RAILROAD RIGHT-OF-WAY (ROW). THE RAILROAD ROW LINES ARE SHOWN ON THE ORIGINAL RIGHT-OF-WAY TRACK MAPS, "THE NEW YORK NEW HAVEN AND HARTFORD R.R.CO." DATED 1915 WHICH ARE AVAILABLE FROM CTDOT FOR THE CONTRACTOR'S USE IN DETERMINING WHERE THE ROW LINES ARE LOCATED IN THE FIELD. THE CONTRACTOR WILL HAVE THESE ROW LINES STAKED IN THE FIELD BY HIS SURVEYOR AS NEEDED TO VERIFY THE ROW LINE LOCATIONS. THERE IS NO SEPARATE BID ITEM FOR THIS WORK. THE COST INCIDENTAL TO DETERMINING THE LOCATION OF THE ROW LINES WILL BE CONSIDERED AS BEING INCLUDED IN THE GENERAL COST OF THE CONTRACT.
19. CONTRACTOR SHALL FURNISH AND INSTALL ALL MESSENGERS, FIGURE 8 DUCTS, INNERDUCTS, CONDUITS, FIBER OPTIC CABLES, AND COPPER CABLES INCLUDING THE SUPPORTING HARDWARE AS SHOWN ON THESE CONTRACT DRAWINGS UNLESS SPECIFICALLY STATED OTHERWISE.
20. EXCESS EXCAVATED MATERIALS SHALL REMAIN ON THE RAILROAD RIGHT-OF-WAY AND SHALL BE SPREAD ON NON-BALLASTED AREAS AS APPROVED BY THE ENGINEER.
21. THE FIRST 4' (MIN.) OF ALL EXCAVATION ALONG THE RIGHT-OF-WAY SHALL BE BY HAND OR OTHER NON-DESTRUCTIVE METHOD APPROVED BY THE ENGINEER.

ELECTRICAL/COMMUNICATIONS GENERAL NOTES:

1. FIBER OPTIC CABLING SHALL NOT BE INSTALLED IN THE SAME CONDUIT AS POWER CONDUCTORS.
2. ALL CONDUITS INSTALLED OUTDOORS AT STATIONS AND PECK BRIDGE SHALL BE PVC-COATED RGS (PVCC). ALL OTHER CONDUITS SHALL BE RGS UNLESS OTHERWISE NOTED. ALL CONDUITS SHALL BE A MINIMUM 3/4" UNLESS SPECIFICALLY NOTED OTHERWISE. CONDUIT WITH FIBER OPTIC CABLING SHALL BE A MINIMUM 1-1/2".
3. CONDUIT SIZES SHOWN ARE MINIMAL AND HAVE BEEN SIZED BASED ON MATERIAL SPECIFICATIONS IN THE NEC AND CONTRACT SPECIFICATIONS. CONTRACTOR SHALL ENSURE PROPER FILL BASED ON ACTUAL CABLING USED. COMMUNICATIONS AND FIBER CONDUIT FILLS SHALL FOLLOW THE SAME REQUIREMENTS AS POWER CONDUITS UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE ENGINEER.
4. CONDUIT/CABLE ROUTING, DEVICE PLACEMENT, AND SHOP DRAWINGS FOR ALL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL RUN CABLE, CONDUIT, AND PIPING IN THE MOST INCONSPICUOUS MANNER, OUT OF THE PUBLIC VIEW AND PARALLEL TO EXISTING RUNS, WHENEVER POSSIBLE. THE INSTALLATION OF CONDUIT, DUCTS, PIPES, AND/OR BRACKETS OVER STATION NAME PLAQUES, SIGNAGE, OR ARTWORK IS EXPRESSLY PROHIBITED.
6. ALL PVC COATED CONDUITS SHALL MAINTAIN THEIR PVC COATINGS AT ALL TIMES. ANY PVC COATING THAT IS DAMAGED, SCRATCHED, OR COMPROMISED IN ANY WAY SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR USING A MANUFACTURER PROVIDED PVC COATING REPAIR KIT.
7. WHERE CONDUITS ARE TO PENETRATE EXISTING CONCRETE, SUBMIT CONCRETE CUTTING LOCATIONS AND PROCEDURES FOR APPROVAL BY THE ENGINEER.
8. PROVIDE A WIRE-TYPE EQUIPMENT GROUNDING CONDUCTOR WITH CIRCUIT CONDUCTORS, SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE OR CONTRACT DOCUMENTS, WHICHEVER IS MORE RESTRICTIVE. RACEWAY SYSTEM SHALL NOT BE UTILIZED AS THE SOLE EQUIPMENT GROUND. RACEWAYS AND THEIR CONNECTIONS TO ELECTRICAL EQUIPMENT/BOXES SHALL BE BONDED TO MAKE A CONTINUOUS GROUND.
9. ALL EQUIPMENT SHALL BE PROPERLY BONDED AND GROUNDED. GROUND ALL EQUIPMENT, ENCLOSURES, AND MOUNTING POLES USING APPROPRIATELY SIZED LUGS AND GROUNDING WIRES. NEW POLES AND PLATFORM ENCLOSURES SHALL BE GROUNDED TO EXISTING GROUNDING SYSTEM UNDER PLATFORM OR NEW GROUND RODS.
10. INSTALL EXPANSION FITTINGS TO COMPENSATE FOR LINEAR THERMAL EXPANSION AND CONTRACTION OF CONDUITS. A CONDUIT EXPANSION FITTING SHOULD BE INSTALLED AT EVERY LOCATION WHERE THE CONDUIT RUNS ACROSS A STRUCTURAL EXPANSION JOINT, AND WHERE CONDUIT RUNS ARE MORE THAN 300 FT. IN LENGTH. USE OF LFMC IN PLACE OF EXPANSION FITTINGS IS ONLY PERMITTED WITH PERMISSION OF THE ENGINEER IN THE FIELD, WHERE CONDUITS ARE SUBJECT TO DEFLECTION, AND STANDARD EXPANSION FITTINGS CANNOT BE USED. SEE ADDITIONAL DETAILS ON DWG. FCI-650.
11. ALL CONDUIT CONNECTIONS SHALL BE WATERTIGHT. USE WATERTIGHT HUBS FOR ALL CONDUIT ENTRANCES INTO EQUIPMENT ENCLOSURES.
12. NON-PVC COATED RIGID CONDUITS, SUPPORTS, AND OTHER HARDWARE IN PUBLIC AREAS SHALL BE PAINTED TO MATCH SURROUNDING SURFACES. COLOR AND TYPE OF PAINT SHALL BE APPROVED BY THE ENGINEER BEFORE PROCEEDING. WHEN AVAILABLE FROM THE MANUFACTURER, COORDINATE COLOR OF LFMC WITH SURROUNDING AREAS.
13. FURNISH AND INSTALL IDENTIFICATION ON ENCLOSURES AND RACKS. PROVIDE PLASTIC NAMEPLATE WITH ENGRAVED LETTERS ON ALL ENCLOSURES AND RACKS IMPACTED/INSTALLED BY THIS CONTRACT. ALL EQUIPMENT WITHIN THE RACKS SHALL BE CLEARLY LABELED AND CROSS REFERENCED TO THE AS-BUILT DRAWINGS.
14. THE CONTRACTOR SHALL TAG, IDENTIFY, AND DOCUMENT ANY CABLES BEING DISCONNECTED PRIOR TO DISCONNECTION. ANY CABLING NOT BEING RECONNECTED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
15. CONDULETS SHALL BE INSTALLED IN CONDUIT RUNS NO MORE THAN EVERY 100 FT. BETWEEN PULLING POINTS, EXCEPT AS APPROVED BY THE ENGINEER IN THE FIELD. FOR CONDUITS CARRYING FIBER OPTIC CABLING, MOGUL-SERIES CONDULETS OR PULL BOXES SHALL BE USED IN PLACE OF CONDULETS TO ALLOW FOR WIDER SWEEPS SO AS TO ENSURE BENDS DO NOT EXCEED MINIMUM BEND RADIUS REQUIREMENTS FOR THE FIBER OPTIC CABLES. SUCH FITTINGS AND/OR PULL BOXES SHALL BE CONSIDERED INCIDENTAL TO THE CONDUIT INSTALLATION. NO ADDITIONAL PAYMENT WILL BE MADE.
16. WHERE FIBER OPTIC CABLES INSTALLED IN CONDUIT REQUIRE A BEND, CONDUIT SWEEPS OR JUNCTION BOXES SHALL BE USED. CONDUIT BODY FITTINGS ("LB", "LL", "TEE", ETC.) SHALL NOT BE USED.
17. CONTRACTOR SHALL PROVIDE ADDITIONAL CIRCUIT BREAKERS IN EXISTING PANELS REQUIRED TO POWER EQUIPMENT PROVIDED UNDER THIS CONTRACT. ALL BREAKERS SHALL BE OF THE SAME TYPE AND AIC RATING AS EXISTING UNLESS OTHERWISE NOTED.
18. THE CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TENSILE FORCE THAT THE CABLE MANUFACTURER RECOMMENDS WHEN PULLING CABLE. CABLE SHALL NOT BE BENT AT ANY TIME DURING INSTALLATION BEYOND THE MANUFACTURER'S SPECIFIED BENDING RADIUS. INSTALLATIONS THAT EXCEED THESE VALUES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
19. NO EQUIPMENT, WIRING, ETC. SHALL BE REMOVED, DISCONNECTED, OR SHUT DOWN WITHOUT PRIOR REVIEW WITH THE ENGINEER TO CONFIRM THAT AREAS TO REMAIN IN OPERATION WILL NOT BE AFFECTED. IF ANY AREAS NOT WITHIN THE SCOPE OF WORK ARE AFFECTED BY ANY SHUTDOWN, REMOVAL, OR DISCONNECTION, ADVANCED NOTICE MUST BE GIVEN TO THE OWNER INDICATING WHICH AREAS WILL BE AFFECTED, WHEN THE PROPOSED SHUTDOWN WILL OCCUR, AND FOR HOW LONG A PERIOD OF TIME. OUTAGES SHALL BE COORDINATED TO PROVIDE MINIMAL DISRUPTION. ALL DISRUPTIONS SHALL BE SCHEDULED WITH AND APPROVED BY THE ENGINEER.
20. ALL PENETRATIONS THROUGH FLOORS AND CEILINGS SHALL BE TIGHT TO ADJACENT WALL UNLESS OTHERWISE APPROVED BY THE ENGINEER IN THE FIELD.
21. ALL PVC CONDUITS SHALL BE SCHEDULE 80 UNLESS OTHERWISE NOTED.
22. ALL OPENINGS IN WALLS, FLOORS, AND CEILINGS SHALL BE SEALED AND PATCHED WITH AN APPROVED FIRE-RATED MATERIAL AND IN A MANNER TO MATCH THE SURROUNDING AREA. ALL PENETRATIONS OF THE EXTERIOR OF A BUILDING SHALL BE MADE WATERTIGHT. CONTRACTOR SHALL UTILIZE WATERTIGHT HUBS AND SEAL ALL PENETRATIONS. NO PENETRATIONS THROUGH THE ROOF OR OTHER MEMBRANE SHALL BE PERMITTED. COORDINATE WITH THE ENGINEER FOR ALL PENETRATION LOCATIONS.
23. FIBER OPTIC SPLICING AND TERMINATIONS WILL BE PERFORMED BY MNR. CONNECTORS AND SPLICE MATERIALS SHALL BE PURCHASED BY THE CONTRACTOR AND PROVIDED TO MNR. ALL FIBER OPTIC CONNECTORS SHALL BE TYPE "LC".
24. ALL JUNCTION BOXES SHALL BE NEMA 4X WITH SEAMLESS FOAM-IN-PLACE GASKET, SEAMS CONTINUOUSLY WELDED AND GROUND SMOOTH, WITH GROUNDING LUG AND BONDING PROVISION ON COVER, AND EXTERNALLY FORMED BODY FLANGE TROUGH. BOXES SHALL BE 14 GAUGE TYPE 316 STAINLESS STEEL WITH 16 GAUGE COVER (MIN.) OR PVC COATED. BOND COVER TO BODY. MINIMUM SIZE SHALL BE 6"X6"X4" UNLESS OTHERWISE INDICATED. THERE IS NO BID ITEM FOR JUNCTION BOXES. JUNCTION BOXES SHALL BE CONSIDERED INCIDENTAL TO THE CONDUIT INSTALLATION. JUNCTION BOXES REQUIRED FOR CAMERA MOUNTING SHALL BE CONSIDERED INCIDENTAL TO THE CAMERA. NO ADDITIONAL PAYMENTS WILL BE MADE.
25. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
26. ALL COPPER ETHERNET CABLING SHALL BE SHIELDED UNLESS OTHERWISE NOTED.
27. PRIOR TO INSTALLATION, CONTRACTOR SHALL VERIFY THE LENGTH OF ANY COPPER ETHERNET CABLE DOES NOT EXCEED 300 FT. IMMEDIATELY NOTIFY THE ENGINEER IF FIELD CONDITIONS REQUIRE CABLE LENGTH GREATER THAN 300 FT.

AERIAL CABLE AND STRUCTURAL GENERAL NOTES:

1. INTERIM CABLE INSTALLATION: CONTRACTOR SHALL SECURE ALL CABLES ON THE STRUCTURE (MIN. 12' ABOVE TOP OF FOUNDATION OR BASE OF WALL, AS APPLICABLE).
2. CONTRACTOR SHALL SUPPLY ALL NEW CABLES, DRILLING, CONDUIT, AND MESSENGER MOUNTING MATERIAL, INCLUDING BUT NOT LIMITED TO, BRACKETS, CLAMPS AND CHANNEL.
3. NO FIELD CUTTING OF PREFABRICATED GALVANIZED STEEL BRACKETS AND HARDWARE SHALL BE PERMITTED.
4. DIMENSIONS OF GALVANIZED FLAT STOCK AND CHANNEL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO FABRICATION.
5. STRUCTURAL FASTENERS SHALL BE ASTM A 325 BOLTS WITH F 436 WASHERS AND A 563 NUTS, ALL HOT DIPPED GALVANIZED PER A 153 (1.25 OUNCE PER SF) AND F 2329.
6. ALL FIELD WORK SHALL BE BOLTED, UNLESS NOTED OTHERWISE.
7. SIZE OF BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLT DIAMETER, UNLESS NOTED OTHERWISE.
8. ALL THREADED RODS AND HARDWARE SHALL BE ASTM A307, GRADE 36, OR ASTM A449 UNLESS NOTED OTHERWISE.
9. ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A36 GRADE 36, UNLESS NOTED OTHERWISE.
10. HOLLOW STRUCTURAL STEEL TUBULAR SECTIONS SHALL CONFORM TO ASTM A500 GRADE B.
11. ALL STEEL WELDS SHALL CONFORM TO AWS D1.1, ELECTRODES SHALL BE E70-XX.
12. ALL ALUMINUM WELDS SHALL CONFORM TO AWS D1.2.
13. STEEL DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISC CONSTRUCTION MANUAL, 14TH EDITION.
14. ANY AND ALL STEEL SPACERS REQUIRED FOR ATTACHMENT TO EXISTING STRUCTURES SHALL BE WELDED DIRECTLY TO SUPPORT BRACKETS. ALL WELDED AREAS SHALL BE TREATED WITH APPROVED TOUCH-UP COLD GALVANIZING COMPOUND. GALVANIZING COMPOUND SHALL BE APPLIED PER ASTM A780 AND MANUFACTURER'S INSTRUCTIONS.
15. A SPLIT DUCT CHAFE GUARD SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT ALL POINTS WHERE CABLES COME IN CONTACT WITH POLES AND STRUCTURES.
16. ALL CABLES SHALL BE CONSTRUCTED FOR AERIAL AND DUCT INSTALLATION PER CONNECTICUT DOT STANDARD SPECIFICATION.
17. SPLICING OF 1-1/4" FIGURE 8 INNER DUCT WILL BE PERMITTED BASED ON AVAILABLE REEL LENGTHS AT LOCATIONS SUBMITTED AND APPROVED BY THE ENGINEER. CONTRACTOR SHALL SUBMIT LOCATION, SPLICE MATERIALS, AND PROCEDURE FOR APPROVAL.
18. UNDER NO CIRCUMSTANCES SHALL MESSENGER STRAND BE SPLICED. STRAND SHALL BE DEAD-ENDED AT THE END OF A REEL IN ACCORDANCE WITH THE SPECIFICATIONS.
19. ALL POLES AND CATENARY STRUCTURES ARE EXISTING (E) SHOWN LIGHT GRAY AND NOT IN CONTRACT (NIC) UNLESS OTHERWISE NOTED.
20. CABLES AND AERIAL DUCT SHALL BE INSTALLED A MINIMUM OF 12' ABOVE STATION PLATFORM AND A MINIMUM OF 3' ABOVE ANY STATION CANOPY OR OTHER STRUCTURE AT THE LOW POINT OF THE WORST SAG AS APPROVED BY THE ENGINEER.
21. CABLE ATTACHMENT, SEE TABLE FOR STRUCTURE TYPE AND ATTACHMENT LOCATION/DETAILS.
22. CATENARY BRIDGE NUMBER APPEARING ABOVE BRIDGE SYMBOLS INDICATE BRIDGE NUMBER.
23. THE FIGURE 8 AERIAL DUCT SHALL BE GROUNDED EVERY 1200' MAXIMUM. THE MAXIMUM DISTANCE BETWEEN DEADEND TERMINATIONS SHALL BE 3000'.
24. ALL MESSENGER HEIGHTS ARE APPROXIMATE AND REFERENCED FROM TOP OF HIGH RAIL OF ADJACENT TRACK UNLESS OTHERWISE NOTED. AVAILABLE SPACE FOR NEW CABLES SHALL BE FIELD VERIFIED. ALL CABLES SHALL BE INSTALLED A MINIMUM OF 12" AT ANY POINT IN THE SPAN FROM EXISTING CABLES.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/31/2016

DESIGNER/DRAFTER: **EN/MN**

CHECKED BY: **CH**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\G-002_FA_Sheet_0300-0178.dgn

SIGNATURE/BLOCK:

STV Incorporated
185 Plains Road
Suite 208E
Milford, CT 06461

PROJECT TITLE:
NETWORK INFRASTRUCTURE UPGRADE FOR SECURITY NEW HAVEN LINE PHASE 2

TOWN:
WESTPORT TO STRATFORD

DRAWING TITLE:
GENERAL NOTES

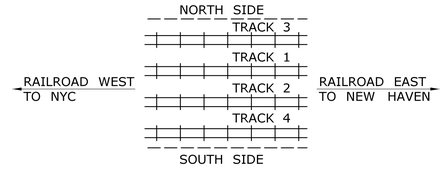
PROJECT NO. **300-0178**
DRAWING NO. **G-002**
SHEET NO. **01.02**

NOMENCLATURE

AB = ANCHOR BRIDGE
AC = ALTERNATING CURRENT
A/C = AMPERE INTERRUPTING CAPACITY
ADA = AMERICANS WITH DISABILITIES ACT
AF = A-FRAME STRUCTURE
AISC = AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AWG/# = AMERICAN WIRE GAUGE
AWS = AMERICAN WELDING SOCIETY
B = BRIDGE ABUTMENT
BC = BUILT-UP STRUCTURE WITH PLATES
C = CONDUIT OR CONDUCTOR
CAT = CATENARY STRUCTURE
CAT 5E = CATEGORY 5E COPPER ETHERNET CABLE
CB = CATENARY SUPPORT STRUCTURE
CCO = COMPONENT CHANGE OUT
CIL = CENTRAL INSTRUMENT LOCATION
CP = CONTROL POINT
CPT = CARRIER PACKET TRANSPORT (CISCO)
CSI = CUSTOMER SERVICE INITIATIVES
CTDOT = CONNECTICUT DEPARTMENT OF TRANSPORTATION
DLC = DATA LINK CABINET
DWG(S)= DRAWING(S)
DVR = DIGITAL VIDEO RECORDER
(E) = EXISTING
EB = EASTBOUND
EHS = EXTRA HIGH STRENGTH
F = FIELD SIDE OF STRUCTURE
° F = DEGREE FAHRENHEIT
FDP = FIBER DISTRIBUTION PANEL
FIGURE 8 = $1\frac{1}{4}$" FIGURE 8 AERIAL DUCT WITH INTEGRAL $\frac{3}{8}$" MESSENGER CABLE CONFIGURATIONS ARE SHOWN IN PARENTHESES
FO = FIBER OPTIC
FT = FEET
Gb = GIGABIT (PER SECOND)
GFCI = GROUND FAULT CURRENT INTERRUPTER
HT = HIGH TOWER
IN = INCH(ES)
IR = INFRARED ILLUMINATOR
IT = INFORMATION TECHNOLOGY
JBOX = JUNCTION BOX
KVM = KEYBOARD, VIDEO, MOUSE
LA = PORTAL LATTICE STRUCTURE WITH ANGLE LEGS
LB = POUND(S)
LC = PORTAL LATTICE STRUCTURE WITH CHANNEL LEGS
LFMC = LIQUID TIGHT FLEXIBLE METAL CONDUIT
M = MIDDLE OF STRUCTURE
Mb = MEGABIT (PER SECOND)
ML = MASTER LOCATION
MNR = METRO-NORTH RAILROAD
MMFO = MULTI MODE FIBER OPTIC CABLE
MS = MID-SPAN
MTAPD = MTA POLICE DEPARTMENT
N = NORTH
NEC = NATIONAL ELECTRICAL CODE
NEMA = NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NESC = NATIONAL ELECTRICAL SAFETY CODE
(N) = NEW
(NIC) = NOT IN CONTRACT
NMS = NETWORK MANAGEMENT SYSTEM
NO(S), #('S) = NUMBER(S)
NVR = NETWORK VIDEO RECORDER
PDU = POWER DISTRIBUTION UNIT
POE = POWER OVER ETHERNET (IEEE 802.3af)
PSI = POUND PER SQUARE INCH
PVC = POLYVINYL CHLORIDE
PVCC = PVC COATED RGS
REF = REFERENCE
RGS = RIGID GALVANIZED STEEL CONDUIT
ROW = RIGHT OF WAY
RR = RAILROAD
RT = RECTANGULAR TUBE
S = SOUTH
SMFO = SINGLE MODE FIBER OPTIC CABLE
SQ. = SQUARE
S.S. = STAINLESS STEEL
ST = STREET
STA. = STATIONING
STR = STRUCTURE
SUB = SUBSTATION
T = TRACK SIDE OF STRUCTURE
T&E = TRANSPORTATION AND ENGINEERING
TP = TRANSMISSION POLE
T/R = TOP OF RAIL
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
UTP = UNSHIELDED TWISTED PAIR CABLE
V = VOLTS
VMS = VIDEO MANAGEMENT SYSTEM
W = WALL OR WIDTH
WA = WIDE ANGLE
WB = WESTBOUND
WF = WIDE FLANGE (I-BEAM) STRUCTURE
WP = WOOD POLE
WWF = WELDED WIRE FABRIC

ROUTING PLANS ONLY

- AERIAL FIGURE 8 INNERDUCT
- 144-FIBER CABLE BY OTHERS
- CABLE IN CONDUIT OR EXISTING DUCT AS NOTED
- CABLE IN CONDUIT - CONCEALED
- CABLE IN CONDUIT - EXPOSED
- CABLE IN DUCT
- CONDUIT TURNED UP OR TOWARDS VIEWER
- CONDUIT TURNED DOWN OR AWAY FROM VIEWER
- 150' CABLE SLACK AT END OF CABLE
- 200' CABLE SLACK
- 144 FIBER CABLE WITH 200' OF SLACK IN CABLE STORAGE LOOP (SNOW SHOE).
- END OF 144 FIBER CABLE REEL WITH 55' OF SLACK IN EACH CABLE STORAGE LOOP (SNOW SHOE). NO CABLE DROP AT THIS LOCATION.
- 24 FIBER CABLE COIL FOR FUTURE CSI PROJECT. LENGTH SHALL BE LONG ENOUGH TO REACH ANYWHERE ON STATION PLATFORM PLUS 100'
- CONCRETE COMMUNICATION VAULT
- ALL MESSENGER CABLES AT THIS LOCATION SHALL BE BONDED TO THE STRUCTURE IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- CHAIN LINK FENCE
- TROUGH
- DB — DUCT BANK
- ROCK WALL
- HIGH-RAIL VEHICLE RAIL ACCESS LOCATION
- CONCRETE OR MASONRY BLOCK WALL
- FIGURE 8 AERIAL DUCT WITH A 3/8" INTEGRAL MESSENGER STRAND.
- PTZ CCTV CAMERA
- FIXED CCTV CAMERA
- IR - INFRARED ILLUMINATOR
- (J) - EXISTING JUNCTION BOX
- [J] - PROPOSED JUNCTION BOX
- [C] - PROPOSED CCTV CABINET
- [E] - EXISTING CCTV CABINET
- [R] - REMOTE SWITCH CABINET
- [S] - SPLICE BOX
- [H] - HAND HOLE
- PROPOSED CCTV POLE
- EXISTING WOOD POLE
- PROPOSED WOOD POLE
- DOWN GUY
- PROPOSED WOOD POLE WITH DOWN GUY
- IN-LINE INSULATOR
- POWER PANEL



RAILROAD GEOGRAPHIC ORIENTATION

NOTE: ALL GEOGRAPHIC DIRECTIONS ARE RELATIVE TO THE RAILROAD UNLESS OTHERWISE NOTED

CAMERA NAMING NOMENCLATURE

XXX - ##

- ## — UNIQUE NUMBER PER LOCATION
- XXX — LOCATION:
  - SPT = SOUTHPORT
  - FFS = FAIRFIELD STATION
  - FFM = FAIRFIELD METRO STATION
  - BPT = BRIDGEPORT STATION
  - PB = PECK BRIDGE
  - STR = STRATFORD STATION

PHASE 1 LOCATIONS

- SS = STATE STREET STATION
- US = NEW HAVEN UNION STATION
- MS = MILFORD STATION
- DB = DEVON BRIDGE
- WS = WEST HAVEN STATION

- SINGLE CATENARY STRUCTURE
- CABLE ATTACHMENT. SEE TABLE FOR STRUCTURE TYPE AND ATTACHMENT LOCATION/DETAILS.
- CATENARY BRIDGE NUMBER APPEARING ABOVE BRIDGE SYMBOLS INDICATE BRIDGE NUMBER
- TRACK
- O/G BRIDGE
- U/G BRIDGE
- MILE POST
- HOUSE ENCLOSURE
- CASE ENCLOSURE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/31/2016

DESIGNER/DRAFTER: EN/MN
CHECKED BY: CH

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\G-003_FA_Sheet_0300-0178.dgn

SIGNATURE/BLOCK:

STV Incorporated
185 Plains Road
Suite 208E
Milford, CT 06461

PROJECT TITLE:
NETWORK INFRASTRUCTURE UPGRADE FOR SECURITY NEW HAVEN LINE PHASE 2

TOWN:
WESTPORT TO STRATFORD

DRAWING TITLE:
ABBREVIATIONS AND LEGEND

PROJECT NO. 300-0178
DRAWING NO. G-003
SHEET NO. 01.03