

CITY OF HUNTINGTON BEACH

DEPARTMENT OF PUBLIC WORKS

GARFIELD AVENUE

FIBER OPTIC COMMUNICATION PLANS

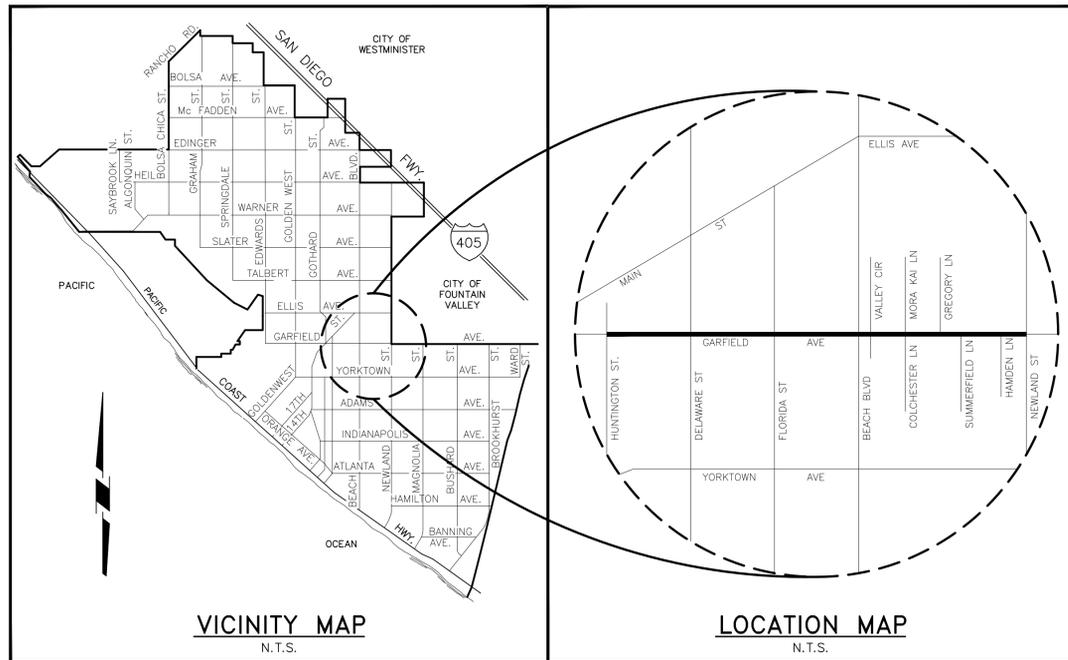
GARFIELD AVENUE FIBER OPTIC INSTALLATION PROJECT

C.C. No. 1682

GENERAL NOTES (ALL SHEETS):

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND STANDARD SPECIFICATIONS, CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF HUNTINGTON BEACH SPECIAL PROVISIONS, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) AND AS DIRECTED BY THE CITY REPRESENTATIVE.
2. LOCATION OF UTILITIES AND SUBSTRUCTURES HAVE BEEN SHOWN FROM A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811, AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING UTILITIES.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL AFFECTED AGENCIES AND UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. WHERE DAMAGE IS CAUSED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR SHALL AT HIS EXPENSE REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH CALTRANS SPECIFICATIONS, TO THE SATISFACTION OF THE AFFECTED UTILITY, OWNERS AND THE ENGINEER IN THE FIELD. WHERE SIDEWALKS, CURBS OR GUTTERS ARE TO BE REPAIRED, THE REPAIRS SHALL BE MADE BY REMOVING AND REPLACING THE ENTIRE SECTION BACK TO THE NEAREST JOINTS AND NOT BY REFINISHING THE DAMAGED PORTION.
5. EACH FIBER OPTIC CABLE SHALL BE PERMANENTLY IDENTIFIED BY DIRECT LABELING.
6. ALL NEW PULL BOXES SHALL BE PLASTIC, EXCEPT WHERE NOTED OTHERWISE ON THE PLANS. ALL NEW PULL BOX EXTENSIONS SHALL BE PLASTIC, EXCEPT WHERE NOTED OTHERWISE ON THE PLANS. ALL NEW PULL BOX LIDS SHALL BE PLASTIC, EXCEPT WHERE NOTED OTHERWISE ON THE PLANS. ALL NEW PULL BOXES SHALL BE NO. 6 UNLESS NOTED OTHERWISE ON THE PLANS. NEW PULL BOXES, EXTENSIONS, AND PULL BOX LIDS SHALL BE CHRISTY CONCRETE PRODUCTS, INC. (FL36X18 FOR BOX, FL37X8 FOR EXTENSION, AND FL36D FOR LID) OR CITY APPROVED EQUAL. PULL BOXES INSTALLED IN LANDSCAPE AREAS OR AREAS WITH PATTERNED OR DECORATIVE/TINTED CONCRETE SHALL INCLUDE PULL BOX STABILIZATION PER CITY STANDARD PLAN 422.
7. NEW CONDUIT SHALL BE PULLED THROUGH OPPOSITE ENDS OF PULL BOXES USING 45° U.L. APPROVED ELBOWS, UNLESS OTHERWISE INDICATED ON THE PLANS.
8. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THE PRECISE FIELD LOCATIONS OF ALL COMMUNICATION EQUIPMENT PRIOR TO INSTALLATION OF EQUIPMENT OR WIRING.
9. THE CONTRACTOR SHALL ARRANGE TO HAVE A FIBER OPTIC COMMUNICATION TECHNICIAN QUALIFIED TO WORK ON THE COMMUNICATION SYSTEM AND EMPLOYED BY THE MANUFACTURER OR THE MANUFACTURER'S REPRESENTATIVE, PRESENT AT THE TIME OF THE SYSTEM TURN ON.
10. THE CONTRACTOR SHALL PROVIDE ALL PATCH CORDS AND CABLING WITH APPROPRIATE CONNECTORS TO CONNECT ALL THE EXISTING AND PROPOSED EQUIPMENT TO HAVE THE SYSTEM FULLY OPERATIONAL.
11. THE CONTRACTOR SHALL PROVIDE SYSTEM INTEGRATION OF THE PROPOSED EQUIPMENT TO THE CITY OF HUNTINGTON BEACH TRAFFIC MANAGEMENT CENTER (TMC). THE CONTRACTOR SHALL FURNISH AND INSTALL THE REQUIRED COMMUNICATION EQUIPMENT TO PROVIDE A COMPLETE OPERATIONAL SYSTEM WITH MINIMUM DISRUPTION TO THE EXISTING COMMUNICATION SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF HUNTINGTON BEACH FOR EQUIPMENT INSTALLATION REQUIREMENTS.
12. THE TRAFFIC SIGNALS SHALL REMAIN IN OPERATION AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY'S TRAFFIC ENGINEERING REPRESENTATIVES ACCORDINGLY.
13. THE LOCATIONS OF PROPOSED FIBER OPTIC SPLICE BOXES AND PULL BOXES ARE APPROXIMATE. EXACT LOCATION OF ALL EQUIPMENT SHALL BE DETERMINED BY CONDITIONS IN THE FIELD AND APPROVED BY THE CITY'S REPRESENTATIVE.
14. THE CONTRACTOR SHALL REVIEW THE EXISTING COMMUNICATION SYSTEM IN THE FIELD AND AT THE CITY OF HUNTINGTON BEACH TMC PRIOR TO ORDERING AND INSTALLING THE PROPOSED EQUIPMENT.
15. POTHOLES REQUIRED FOR UTILITIES SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST FOR THE POTHOLES REQUIRED SHALL BE INCLUDED IN THE CONTRACT BID PRICE.
16. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 72 HOURS PRIOR TO CONSTRUCTION FOR SCHEDULING ALL INSPECTIONS.
17. CONTRACTOR SHALL PROVIDE MINIMUM 15' OF FIBER OPTIC DROP CABLE SLACK IN ALL PULL BOXES AND MINIMUM 50' SLACK IN PULL BOXES WITH SPLICE CLOSURES, ADJACENT TO CONTROLLER CABINETS, AND/OR ADJACENT TO SPLICE ENCLOSURE CABINETS.
18. CONTRACTOR SHALL REMOVE EXISTING WIRING AND CONDUCTORS NOT REUSED.
19. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BIDDING.
20. WORK HOURS SHALL BE FROM 7:00 A.M. TO 4:00 P.M. MONDAY TO FRIDAY. LANE CLOSURES ARE LIMITED TO 9:00 A.M. TO 4:00 P.M. MONDAY TO FRIDAY.

GARFIELD AVE. FROM HUNTINGTON ST. TO NEWLAND ST.
C.C. No. 1682



APPROVED: THOMAS M. HERBEL, P.E. DATE _____
CITY ENGINEER

APPROVED: SEAN CRUMBY, P.E. DATE _____
DIRECTOR OF PUBLIC WORKS

BASIS OF BEARING:

HORIZONTAL CONTROL: N/A
FOR REFERENCE: HELD 10+00 AT THE INTERSECTION OF GARFIELD AVENUE AND HUNTINGTON STREET STATIONS INCREASING EASTERLY.

NOTICE TO THE CONTRACTOR

CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

NPDES GENERAL NOTES:

1. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING INDUSTRY ACCEPTED BEST MANAGEMENT PRACTICES (BMPs). THESE BMPs SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY SUCH AS GRADING THAT MAY CAUSE SOIL DISTURBANCE. THESE BMPs ARE TO BE MAINTAINED YEAR-ROUND OR UNTIL ALL LOOSE SEDIMENT HAS BEEN STABILIZED.
2. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES AND ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND. STOCKPILED MATERIAL SHALL BE NO MORE THAN 8 FEET IN HEIGHT AND SHALL BE COMPLETELY COVERED WITH A SECURE IMPERMEABLE COVER AT THE END OF EACH WORK DAY. ALL STOCKPILES SHALL BE LOCATED AWAY FROM ANY STORM DRAIN INLETS AND AWAY FROM ANY STORM WATER CONVEYANCE STRUCTURES. AT NO TIME SHALL ANY RAW MATERIAL BE STAGED OR STOCKPILED ON CITY STREETS, SIDEWALKS, AND/OR GUTTERS WITHOUT A VALID OBSTRUCTION PERMIT.
3. APPROPRIATE BMPs FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, AND ADJOINING PROPERTY BY WIND OR RUNOFF.
4. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED ON THE CONSTRUCTION SITE AND SHALL NOT BE DISCHARGED TO RECEIVING WATERS OR TO THE STORM DRAIN SYSTEM.
5. CONCRETE WASH OUT WATER SHALL BE CONTAINED IN A WATER-TIGHT DEVICE TO PREVENT CEMENT DEPOSITION ONTO THE GROUND AND RUNOFF INTO STREETS, DRAINAGE FACILITIES, AND RECEIVING WATERS.
6. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BMPs AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
7. AT THE END OF EACH WORK DAY, ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN COVERED TRASH OR RECYCLE BINS.
8. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT STORMWATER DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OF MATERIALS OTHER THAN STORMWATER (NON-STORMWATER DISCHARGES) ARE PROHIBITED EXCEPT AS AUTHORIZED BY AN INDIVIDUAL NPDES PERMIT OR THE STATEWIDE GENERAL CONSTRUCTION STORMWATER PERMIT.
9. ALL UNPAVED CONSTRUCTION ENTRANCES AND EXITS SHALL BE PROTECTED USING AN EFFECTIVE COMBINATION OF TRACKING CONTROL BMPs TO MINIMIZE AND/OR ELIMINATE OFF-SITE TRACKING OF SEDIMENT. THESE BMPs SHALL BE MAINTAINED AND INSPECTED DAILY.
10. ALL TEMPORARY PORTABLE RESTROOMS MUST HAVE A CATCHMENT PAN AND MUST BE LOCATED AT LEAST 50 FEET AWAY FROM ANY STORM DRAIN INLETS.
11. POLLUTANTS ARE ANY SUBSTANCES INTRODUCED INTO THE ENVIRONMENT THAT ADVERSELY AFFECTS THE USEFULNESS OF A RESOURCE. POTENTIAL POLLUTANTS INCLUDE, BUT ARE NOT LIMITED TO: SEDIMENT; SOLID OR LIQUID CHEMICALS SUCH AS: PAINTS, STAINS, SEALANTS, SOLVENTS, DETERGENTS, GLUES, LIME, PESTICIDE, HERBICIDE, FERTILIZERS, WOOD PRESERVATIVES AND ASBESTOS FIBERS; PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; CONCRETE, AND RELATED CUTTING OR CURING RESIDUES; FLOATABLE WASTES; WASTES FROM ENGINE / EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; WASTES FROM STREET CLEANING; AND SUPER-CHLORINATED POTABLE WATER FROM LINE FLUSHINGS AND TESTING.
12. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED MANNER. A DESIGNATED TEMPORARY AREA ON-SITE SHALL BE PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
13. DISCHARGING CONTAMINATED GROUNDWATER, PRODUCED BY DEWATERING GROUNDWATER THAT HAS INFILTRATED INTO THE CONSTRUCTION SITE IS PROHIBITED. DISCHARGING OF CONTAMINATED SOILS VIA SURFACE EROSION IS ALSO PROHIBITED. DISCHARGING NON-CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING ACTIVITIES REQUIRES A NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
14. DISCHARGES OF STORM WATER FROM CONSTRUCTION SITES SHALL NOT BE LADEN WITH SEDIMENT. ALL STORM WATER DISCHARGES MUST BE RELATIVELY FREE OF SEDIMENT.
15. ALL CONTRACTORS AND CONSTRUCTION PERSONNEL SHALL MEET THE REGULATORY CONSTRUCTION REQUIREMENTS ON THE PROJECT SITE IN COMPLIANCE WITH THE CITY'S MUNICIPAL CODE 14.25, STORMWATER AND URBAN RUNOFF MANAGEMENT AND MUNICIPAL CODE 17.05, GRADING AND EXCAVATION CODE.

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION NOTES/COMMUNICATION ARCHITECTURE
3	FIBER OPTIC COMMUNICATION PLAN - GARFIELD AVE. FROM HUNTINGTON ST. TO FLORIDA ST.
4	FIBER OPTIC COMMUNICATION PLAN - GARFIELD AVE. FROM BEACH BLVD TO LISTER LN.
5	FIBER OPTIC COMMUNICATION PLAN - GARFIELD AVE. FROM GREGORY LN. TO NEWLAND ST.
6	FIBER ASSIGNMENTS/DETAILS
7	CONSTRUCTION DETAILS - PULL BOX AND CONDUIT
8	CONSTRUCTION DETAILS - CALTRANS

Underground Service Alert
Call: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'V'D

REFERENCES				

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
Tel: (949) 861-4999
Fax: (949) 502-5522
www.advantec-usa.com

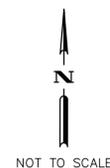
DRAWN BY: MO/NP 06/17/22
DESIGNED BY: MO/JD 06/17/22
CHECKED BY: JD 06/17/22

PREPARED UNDER THE SUPERVISION OF:
JOHN A. DORADO II, PE 06/17/22
R.C.E. NO.: 74405 EXP. DATE: 09/30/23
REVIEWED BY: _____ DATE _____
TRANSPORTATION ENGINEERING

CITY OF HUNTINGTON BEACH
DEPARTMENT OF PUBLIC WORKS

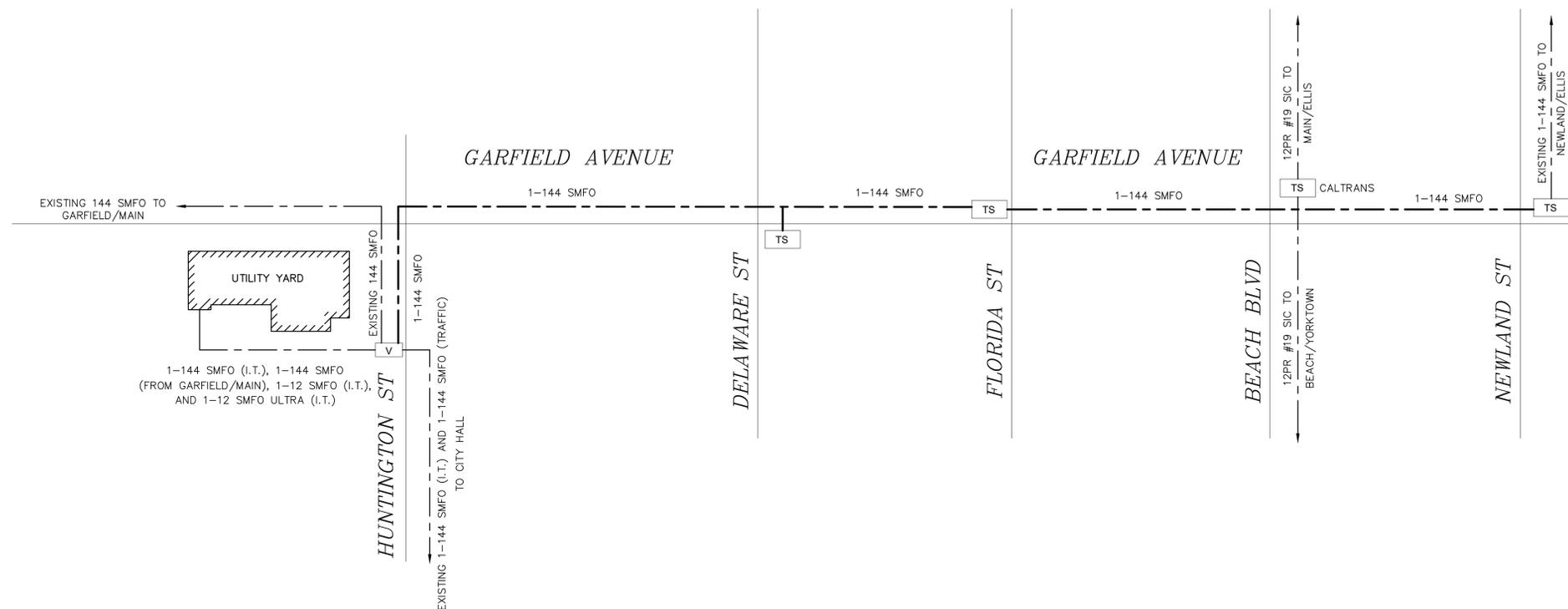
TITLE SHEET
FIBER OPTIC COMMUNICATION PLANS
GARFIELD AVENUE

SHEET NO.
1
OF
8



CONSTRUCTION NOTES:

- 1 FURNISH AND INSTALL 144 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 2 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 3 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 4 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID-SPAN SPLICE OF FIBER DISTRIBUTION CABLE AND BREAK-OUT SPLICE OF FIBER DROP CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.
- 5 FURNISH AND INSTALL 12/24 PORT FIBER PATCH PANEL COMPLETE (RACK/WALL MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.
- 6 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (CHRISTY N40 UTILITY BOX OR CITY-APPROVED EQUAL). PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 7 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE, AND #12 TRACER WIRE. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 8 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT STUB-OUT FOR FUTURE CONNECTION. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 9 FURNISH AND INSTALL ETHERWAN EX73934E-OVB FIBER SWITCH, POWER SUPPLY, AND JUMPERS CABLES COMPLETE IN EXISTING/NEW CONTROLLER CABINET.
- 10 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID-SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLE AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET.
- 11 REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL CONTROLLER. FURNISH AND INSTALL NEW 2070LX CONTROLLER WITH 1C MODULE AND OMNI EX SOFTWARE (LATEST VERSION) IN EXISTING TYPE 332 CABINET. CONTRACTOR SHALL MODIFY THE EXISTING 332 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
- 12 REMOVE AND DISCARD EXISTING COPPER SIGNAL INTERCONNECT (SIC) CABLE FROM CONDUIT AS SHOWN. CONTRACTOR TO REMOVE SIC FROM TRAFFIC SIGNAL CABINET.
- 13 FURNISH AND INSTALL BOSCH MIC IP 7100 STARLIGHT OR APPROVED EQUAL, CCTV CABLE, MOUNTING HARDWARE, AUXILIARY EQUIPMENT ON SIGNAL POLE COMPLETE. INSTALL HARDENED PoE POWER INJECTOR AND PoE EXTENDER (AS APPLICABLE) AT CONTROLLER CABINET. SEE DETAIL SHEETS AND CAMERA MANUFACTURER SPECIFICATIONS FOR DETAILS. FINAL MOUNTING LOCATION SHALL BE APPROVED BY THE ENGINEER.
- 14 FURNISH AND INSTALL CCTV CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM CAMERA ASSEMBLY TO CONTROLLER CABINET, NO SPLICES ALLOWED.



NOTICE TO CONTRACTOR
 CONTRACTOR SHALL
 COORDINATE WITH CITY AND
 CONTRACTOR FOR OTHER FIBER
 OPTIC COMMUNICATION PROJECT,
 C.C. No. 1646



Underground Service Alert
 Call: TOLL FREE
811
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'D

REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
 Traffic + ITS + Communications + Systems + Electrical
 1200 Roosevelt
 Irvine, CA 92620
 Tel: (949) 861-4999
 Fax: (949) 502-5522
 www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
 DESIGNED BY: MO/JAD 06/17/22
 CHECKED BY: JAD 06/17/22

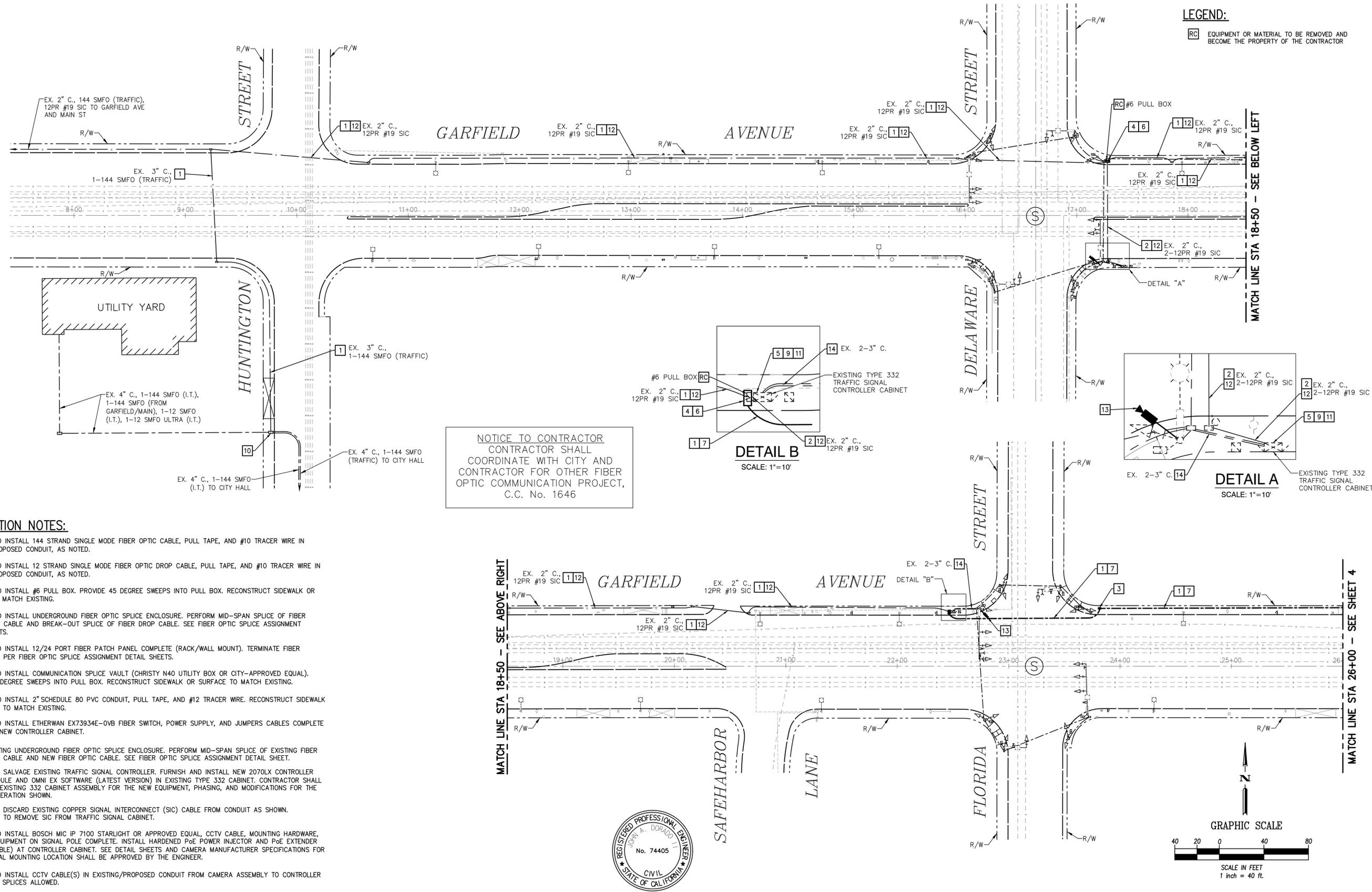
PREPARED UNDER THE SUPERVISION OF:
 JOHN A. DORADO II, PE 06/17/22
 R.C.E. NO.: 74405 EXP. DATE: 09/30/23
 REVIEWED BY:
 TRANSPORTATION ENGINEERING DATE

CITY OF HUNTINGTON BEACH
 DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATION PLAN
 CONSTRUCTION NOTES AND
 COMMUNICATION ARCHITECTURE SCHEMATIC
 GARFIELD AVENUE

SHEET NO.	2
OF	8

LEGEND:
RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR



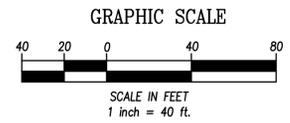
NOTICE TO CONTRACTOR
 CONTRACTOR SHALL COORDINATE WITH CITY AND CONTRACTOR FOR OTHER FIBER OPTIC COMMUNICATION PROJECT, C.C. No. 1646

CONSTRUCTION NOTES:

- 1 FURNISH AND INSTALL 144 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 2 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 3 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 4 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID-SPAN SPLICE OF FIBER DISTRIBUTION CABLE AND BREAK-OUT SPLICE OF FIBER DROP CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.
- 5 FURNISH AND INSTALL 12/24 PORT FIBER PATCH PANEL COMPLETE (RACK/WALL MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.
- 6 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (CHRISTY N40 UTILITY BOX OR CITY-APPROVED EQUAL). PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 7 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE, AND #12 TRACER WIRE. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 9 FURNISH AND INSTALL ETHERWAN EX73934E-0VB FIBER SWITCH, POWER SUPPLY, AND JUMPERS CABLES COMPLETE IN EXISTING/NEW CONTROLLER CABINET.
- 10 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID-SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLE AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET.
- 11 REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL CONTROLLER. FURNISH AND INSTALL NEW 2070LX CONTROLLER WITH 1C MODULE AND OMNI EX SOFTWARE (LATEST VERSION) IN EXISTING TYPE 332 CABINET. CONTRACTOR SHALL MODIFY THE EXISTING 332 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
- 12 REMOVE AND DISCARD EXISTING COPPER SIGNAL INTERCONNECT (SIC) CABLE FROM CONDUIT AS SHOWN. CONTRACTOR TO REMOVE SIC FROM TRAFFIC SIGNAL CABINET.
- 13 FURNISH AND INSTALL BOSCH MIC IP 7100 STARLIGHT OR APPROVED EQUAL, CCTV CABLE, MOUNTING HARDWARE, AUXILIARY EQUIPMENT ON SIGNAL POLE COMPLETE. INSTALL HARDENED PoE POWER INJECTOR AND PoE EXTENDER (AS APPLICABLE) AT CONTROLLER CABINET. SEE DETAIL SHEETS AND CAMERA MANUFACTURER SPECIFICATIONS FOR DETAILS. FINAL MOUNTING LOCATION SHALL BE APPROVED BY THE ENGINEER.
- 14 FURNISH AND INSTALL CCTV CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM CAMERA ASSEMBLY TO CONTROLLER CABINET, NO SPLICES ALLOWED.

DETAIL B
 SCALE: 1"=10'

DETAIL A
 SCALE: 1"=10'



Underground Service Alert
 Call: TOLL FREE
811
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'D

REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
 Traffic + ITS + Communications + Systems + Electrical
 1200 Roosevelt
 Irvine, CA 92620
 Tel: (949) 861-4999
 Fax: (949) 502-5522
 www.advantec-usa.com

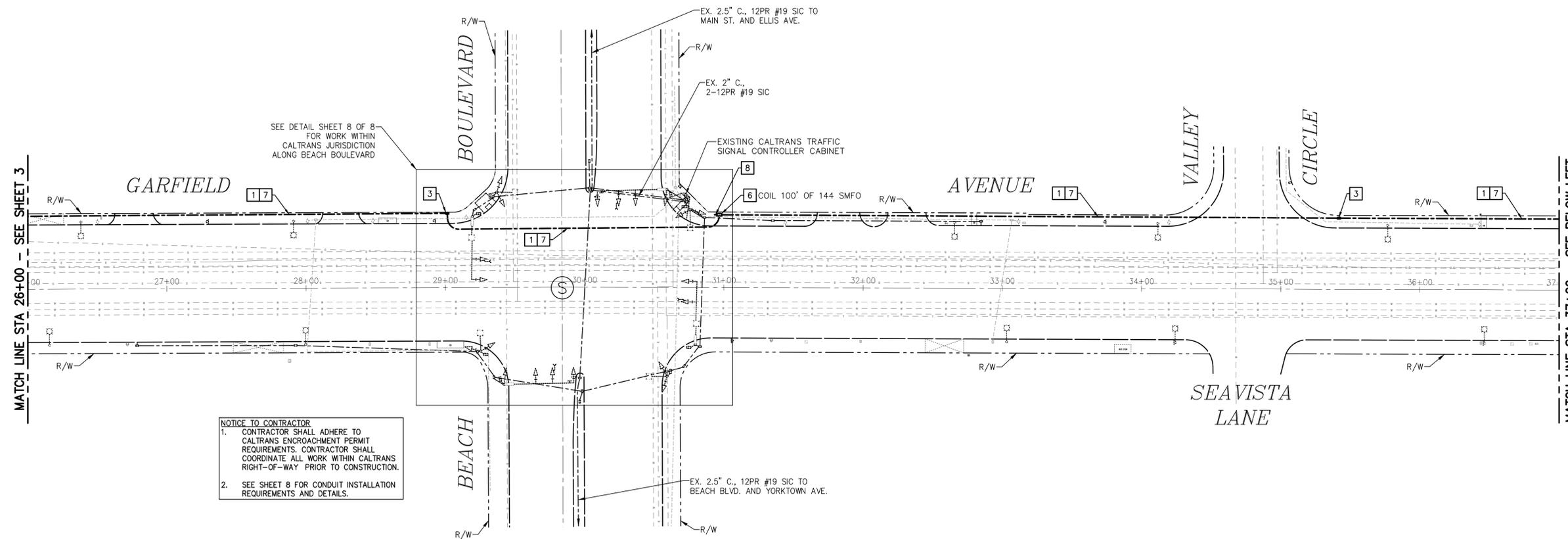
DRAWN BY: MO/NP 06/17/22
 DESIGNED BY: MO/JAD 06/17/22
 CHECKED BY: JAD 06/17/22

PREPARED UNDER THE SUPERVISION OF:
JOHN A. DORADO II, PE
 06/17/22
 R.C.E. NO.: 74405 EXP. DATE: 09/30/23

REVIEWED BY:
 TRANSPORTATION ENGINEERING DATE

CITY OF HUNTINGTON BEACH
 DEPARTMENT OF PUBLIC WORKS

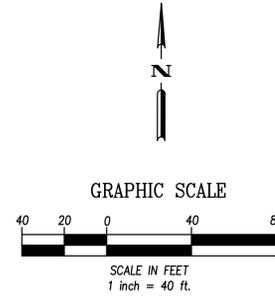
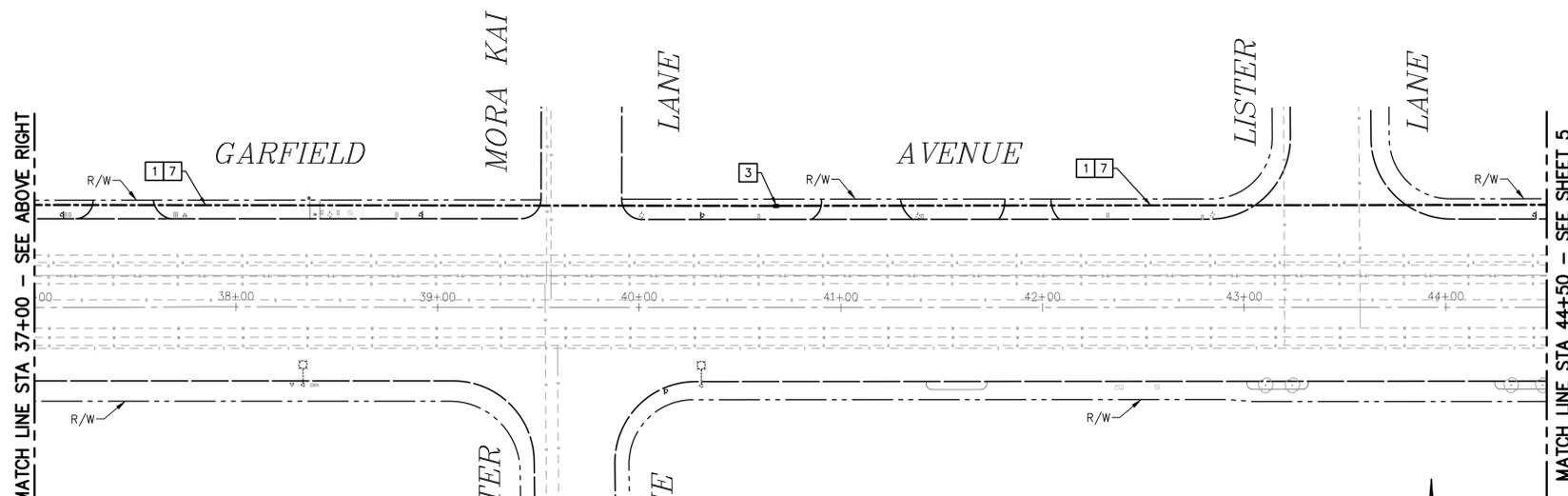
FIBER OPTIC COMMUNICATION PLAN
GARFIELD AVENUE
 BETWEEN HUNTINGTON ST. AND FLORIDA ST.
 STA 8+00 TO 26+00



NOTICE TO CONTRACTOR
 1. CONTRACTOR SHALL ADHERE TO CALTRANS ENCROACHMENT PERMIT REQUIREMENTS. CONTRACTOR SHALL COORDINATE ALL WORK WITHIN CALTRANS RIGHT-OF-WAY PRIOR TO CONSTRUCTION.
 2. SEE SHEET 8 FOR CONDUIT INSTALLATION REQUIREMENTS AND DETAILS.

CONSTRUCTION NOTES:

- 1 FURNISH AND INSTALL 144 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 3 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 6 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (CHRISTY N40 UTILITY BOX OR CITY-APPROVED EQUAL). PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 7 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE, AND #12 TRACER WIRE. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 8 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT STUB-OUT FOR FUTURE CONNECTION. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.



CALTRANS ENCROACHMENT PERMIT #XXX-XXX-XXXX

Underground Service Alert
 Call: TOLL FREE
811
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'V'D

REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
 Traffic + ITS + Communications + Systems + Electrical
 1200 Roosevelt
 Irvine, CA 92620
 Tel: (949) 861-4999
 Fax: (949) 502-5522
 www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
 DESIGNED BY: MO/JAD 06/17/22
 CHECKED BY: JAD 06/17/22

PREPARED UNDER THE SUPERVISION OF:
 JOHN A. DORADO II, PE
 R.C.E. NO.: 74405 EXP. DATE: 09/30/23
 DATE: 06/17/22

REVIEWED BY:
 TRANSPORTATION ENGINEERING DATE

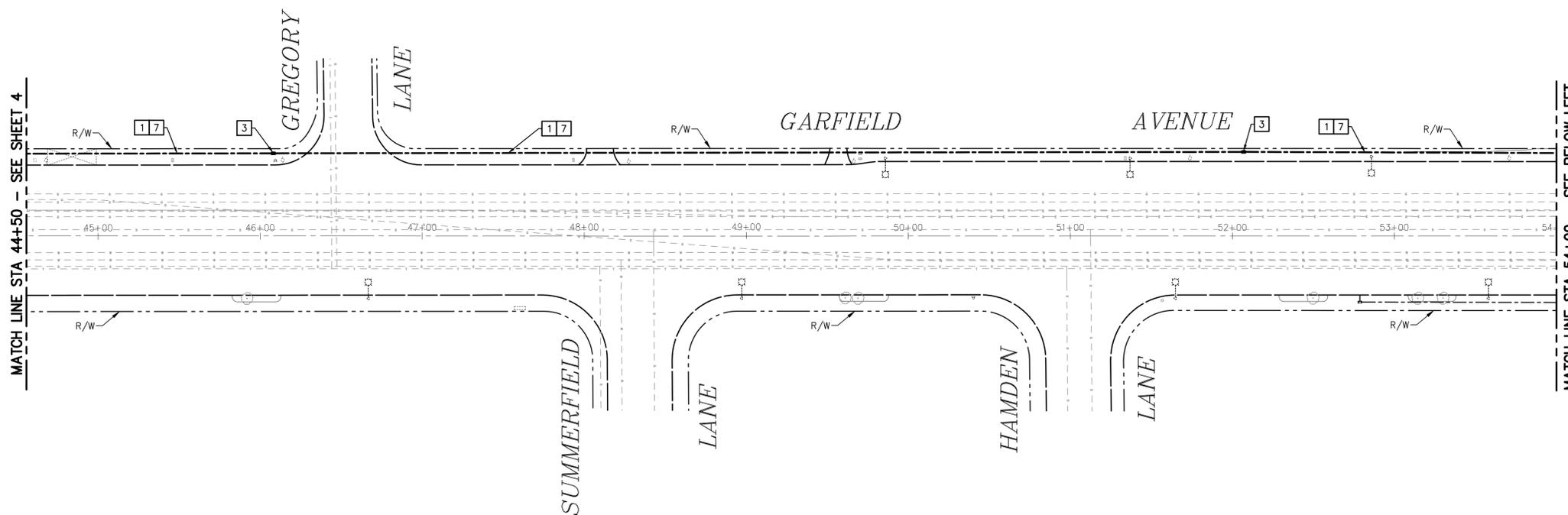
CITY OF HUNTINGTON BEACH
 DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATION PLAN
GARFIELD AVENUE
 BETWEEN BEACH BLVD. AND LISTER LN.
 STA 26+00 TO 44+50

SHEET NO.	4
OF	8

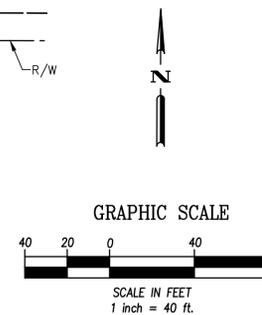
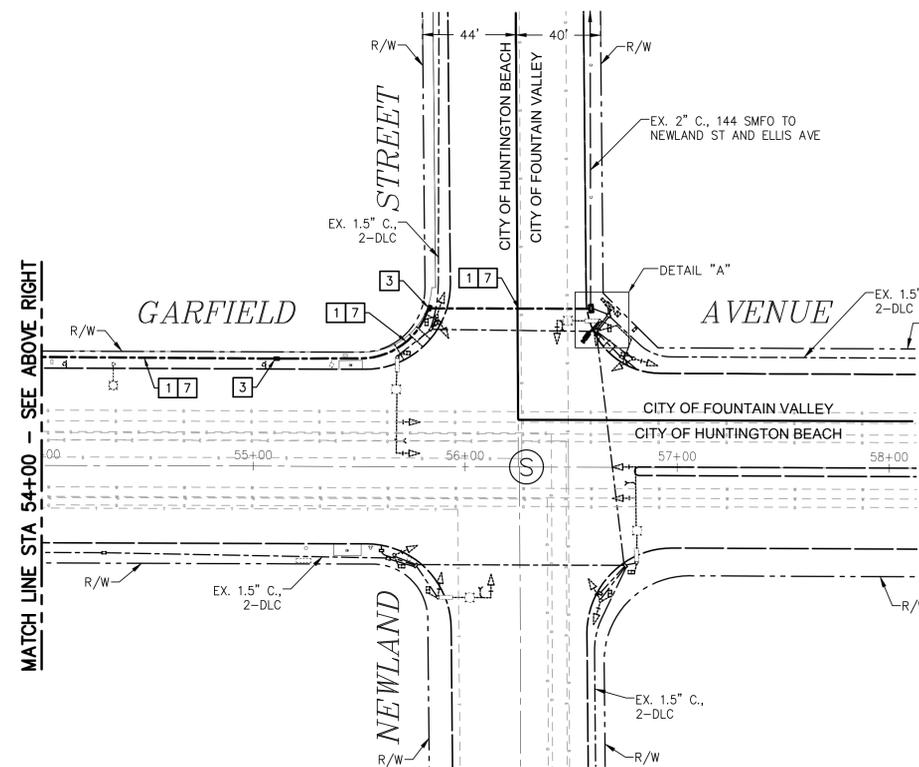
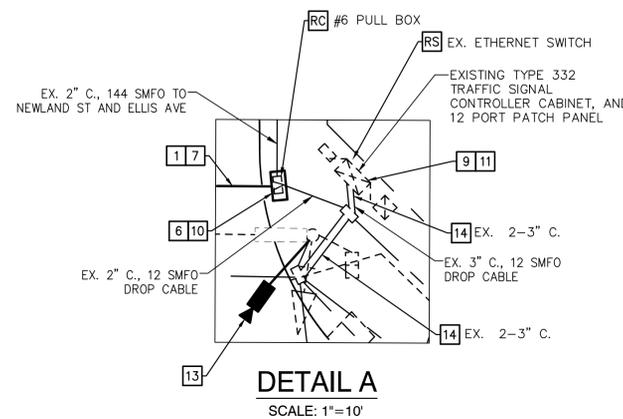
LEGEND:

- RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
- RS REMOVE AND SALVAGE EQUIPMENT



CONSTRUCTION NOTES:

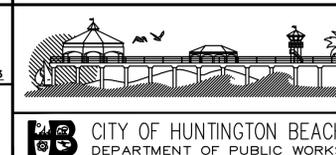
- 1 FURNISH AND INSTALL 144 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND #10 TRACER WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
- 3 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 6 FURNISH AND INSTALL COMMUNICATION SPlice VAULT (CHRISTY N40 UTILITY BOX OR CITY-APPROVED EQUAL). PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 7 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE, AND #12 TRACER WIRE. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
- 9 FURNISH AND INSTALL ETHERWAN EX73934E-0VB FIBER SWITCH, POWER SUPPLY, AND JUMPERS CABLES COMPLETE IN EXISTING/NEW CONTROLLER CABINET.
- 10 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPlice ENCLOSURE. PERFORM MID-SPAN SPlice OF EXISTING FIBER DISTRIBUTION CABLE AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPlice ASSIGNMENT DETAIL SHEET.
- 11 REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL CONTROLLER. FURNISH AND INSTALL NEW 2070LX CONTROLLER WITH 1C MODULE AND OMNI EX SOFTWARE (LATEST VERSION) IN EXISTING TYPE 332 CABINET. CONTRACTOR SHALL MODIFY THE EXISTING 332 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
- 13 FURNISH AND INSTALL BOSCH MIC IP 7100 STARLIGHT OR APPROVED EQUAL, CCTV CABLE, MOUNTING HARDWARE, AUXILIARY EQUIPMENT ON SIGNAL POLE COMPLETE. INSTALL HARDENED PoE POWER INJECTOR AND PoE EXTENDER (AS APPLICABLE) AT CONTROLLER CABINET. SEE DETAIL SHEETS AND CAMERA MANUFACTURER SPECIFICATIONS FOR DETAILS. FINAL MOUNTING LOCATION SHALL BE APPROVED BY THE ENGINEER.
- 14 FURNISH AND INSTALL CCTV CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM CAMERA ASSEMBLY TO CONTROLLER CABINET, NO SPlices ALLOWED.



CITY OF FOUNTAIN VALLEY
APPROVED BY: _____
DATE: _____

PREPARED UNDER THE SUPERVISION OF:
JOHN A. DORADO II, PE 06/17/22
DATE
R.C.E. NO.: 74405 EXP. DATE: 09/30/23

REVIEWED BY: _____
TRANSPORTATION ENGINEERING DATE: _____



FIBER OPTIC COMMUNICATION PLAN
GARFIELD AVENUE
BETWEEN GREGORY LN. AND NEWLAND ST.
STA 44+50 TO 58+00

SHEET NO. 5 OF 8

Underground Service Alert
Call: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'D

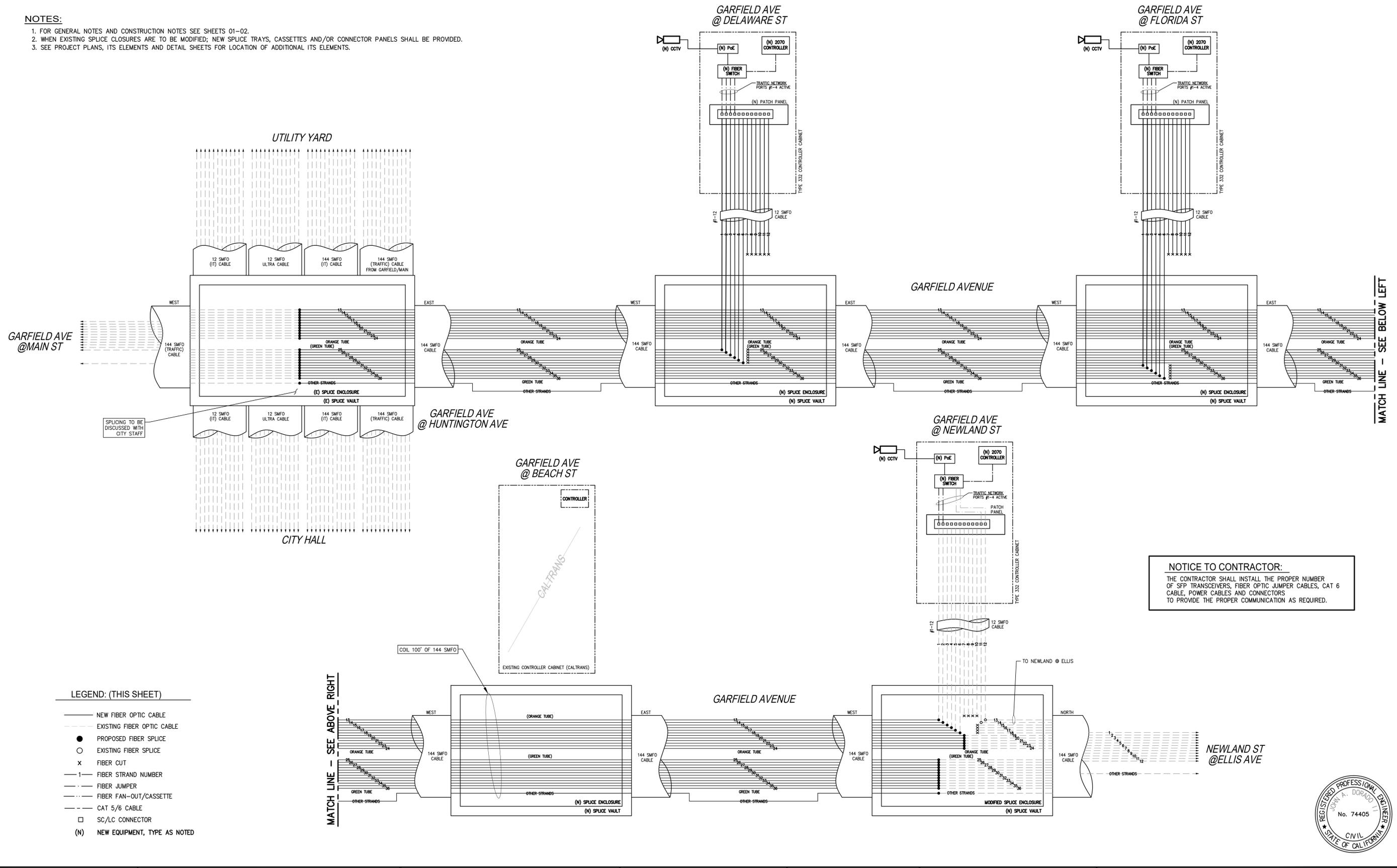
REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
Tel: (949) 861-4999
Fax: (949) 502-5522
www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
DESIGNED BY: MO/JAD 06/17/22
CHECKED BY: JAD 06/17/22

NOTES:

1. FOR GENERAL NOTES AND CONSTRUCTION NOTES SEE SHEETS 01-02.
2. WHEN EXISTING SPlice CLOSURES ARE TO BE MODIFIED; NEW SPlice TRAYS, CASSETTES AND/OR CONNECTOR PANELS SHALL BE PROVIDED.
3. SEE PROJECT PLANS, ITS ELEMENTS AND DETAIL SHEETS FOR LOCATION OF ADDITIONAL ITS ELEMENTS.



NOTICE TO CONTRACTOR:
 THE CONTRACTOR SHALL INSTALL THE PROPER NUMBER OF SFP TRANSCEIVERS, FIBER OPTIC JUMPER CABLES, CAT 6 CABLE, POWER CABLES AND CONNECTORS TO PROVIDE THE PROPER COMMUNICATION AS REQUIRED.

- LEGEND: (THIS SHEET)**
- NEW FIBER OPTIC CABLE
 - - - EXISTING FIBER OPTIC CABLE
 - PROPOSED FIBER SPlice
 - EXISTING FIBER SPlice
 - x FIBER CUT
 - 1— FIBER STRAND NUMBER
 - - - FIBER JUMPER
 - - - FIBER FAN-OUT/CASSETTE
 - - - CAT 5/6 CABLE
 - SC/LC CONNECTOR
 - (N) NEW EQUIPMENT, TYPE AS NOTED

Underground Service Alert
 Call: TOLL FREE
811
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'V'D

REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
 Traffic + ITS + Communications + Systems + Electrical
 1200 Roosevelt
 Irvine, CA 92620
 Tel: (949) 861-4999
 Fax: (949) 502-5522
 www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
 DESIGNED BY: MO/JAD 06/17/22
 CHECKED BY: JAD 06/17/22

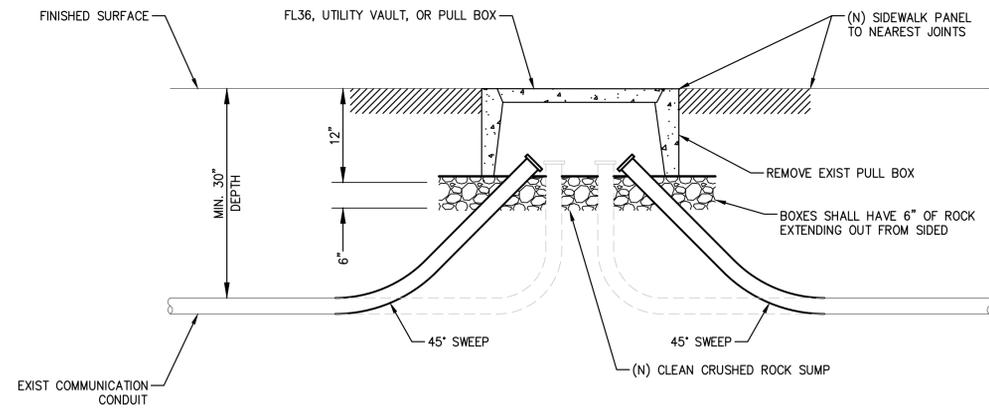
PREPARED UNDER THE SUPERVISION OF:
JOHN A. DORADO II, PE
 R.C.E. NO.: 74405 EXP. DATE: 09/30/23
 DATE: 06/17/22

REVIEWED BY:
 TRANSPORTATION ENGINEERING DATE: _____

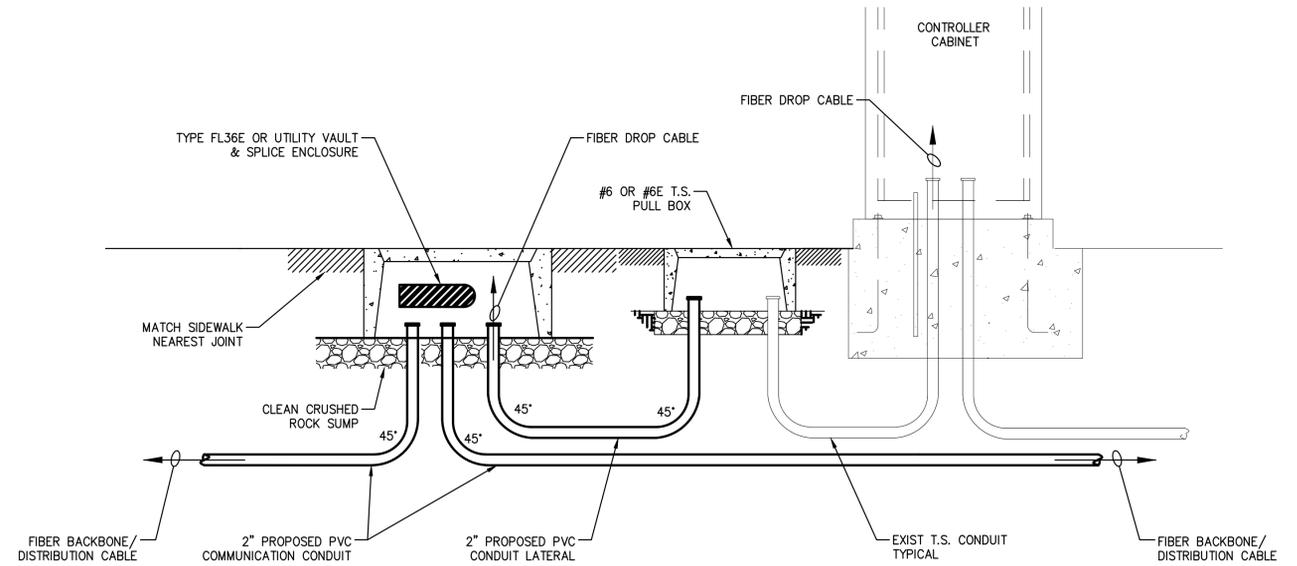
CITY OF HUNTINGTON BEACH
 DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATION PLAN
CONSTRUCTION DETAILS
 PULL BOX AND CONDUIT

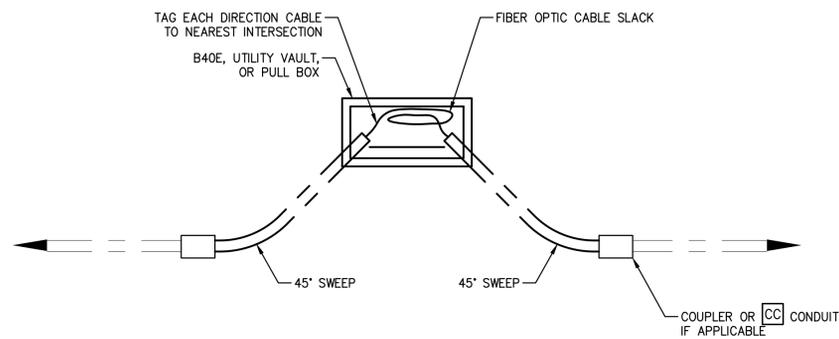




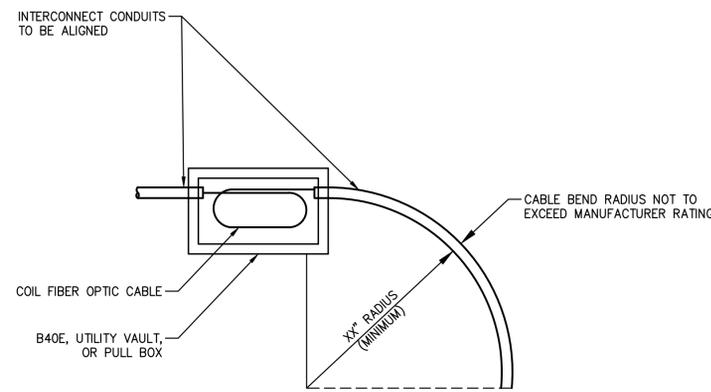
REMOVAL AND REPLACEMENT OF EXISTING PULL BOX/UTILITY VAULT
NOT TO SCALE



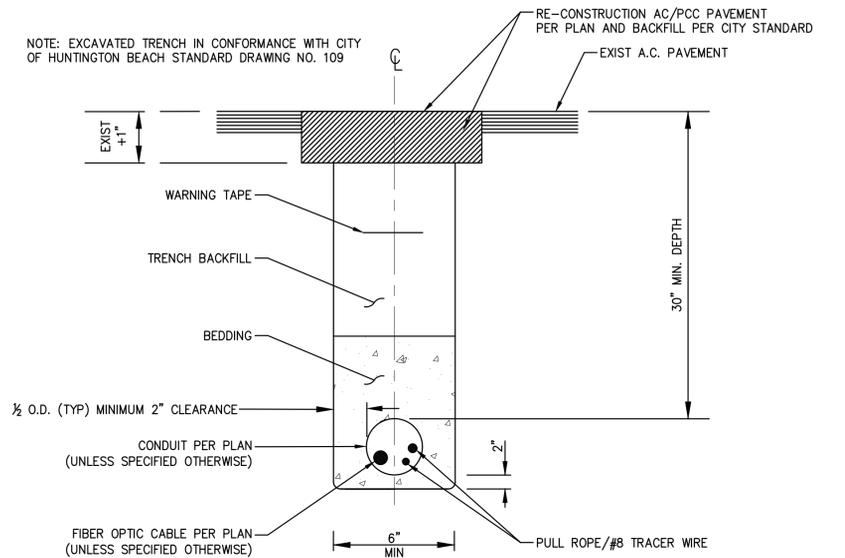
TYPICAL UTILITY VAULT/ FIBER OPTIC ENTERING CABINET DETAIL
NOT TO SCALE



TYPICAL CONDUIT ENTERING UTILITY VAULT/ PULL BOX DETAIL
NOT TO SCALE



TYPICAL CONDUIT RADIUS
NOT TO SCALE



TYPICAL TRENCH DETAIL
NOT TO SCALE



REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'D

REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
 Traffic + ITS + Communications + Systems + Electrical
 1200 Roosevelt
 Irvine, CA 92620
 Tel: (949) 861-4999
 Fax: (949) 502-5522
 www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
 DESIGNED BY: MO/JAD 06/17/22
 CHECKED BY: JAD 06/17/22

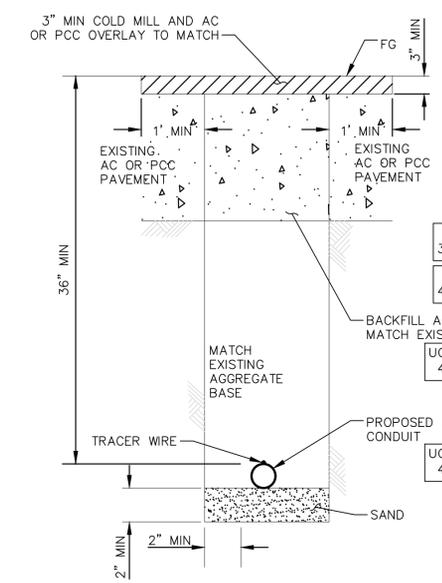
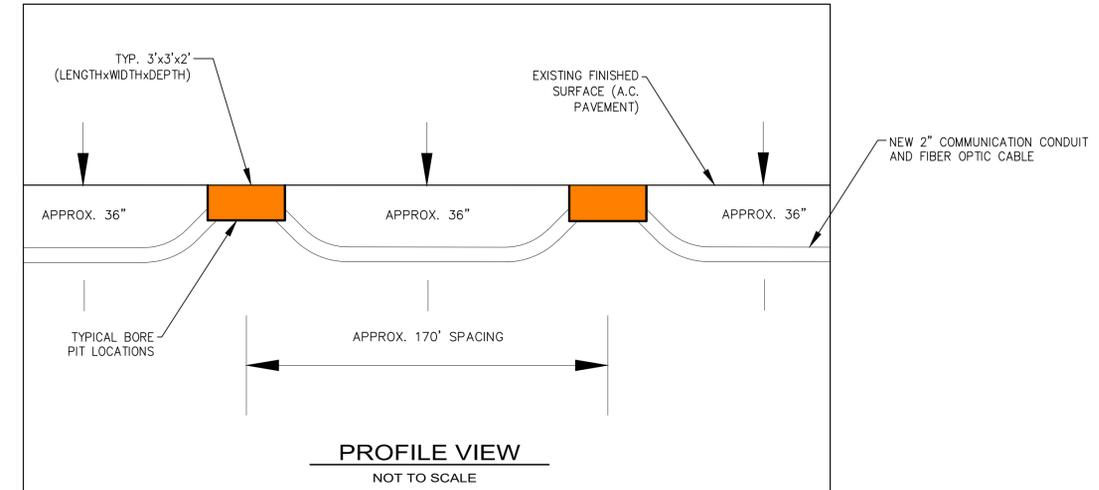
PREPARED UNDER THE SUPERVISION OF:
 JOHN A. DORADO II, PE 06/17/22
 R.C.E. NO.: 74405 EXP. DATE: 09/30/23

REVIEWED BY:
 TRANSPORTATION ENGINEERING DATE

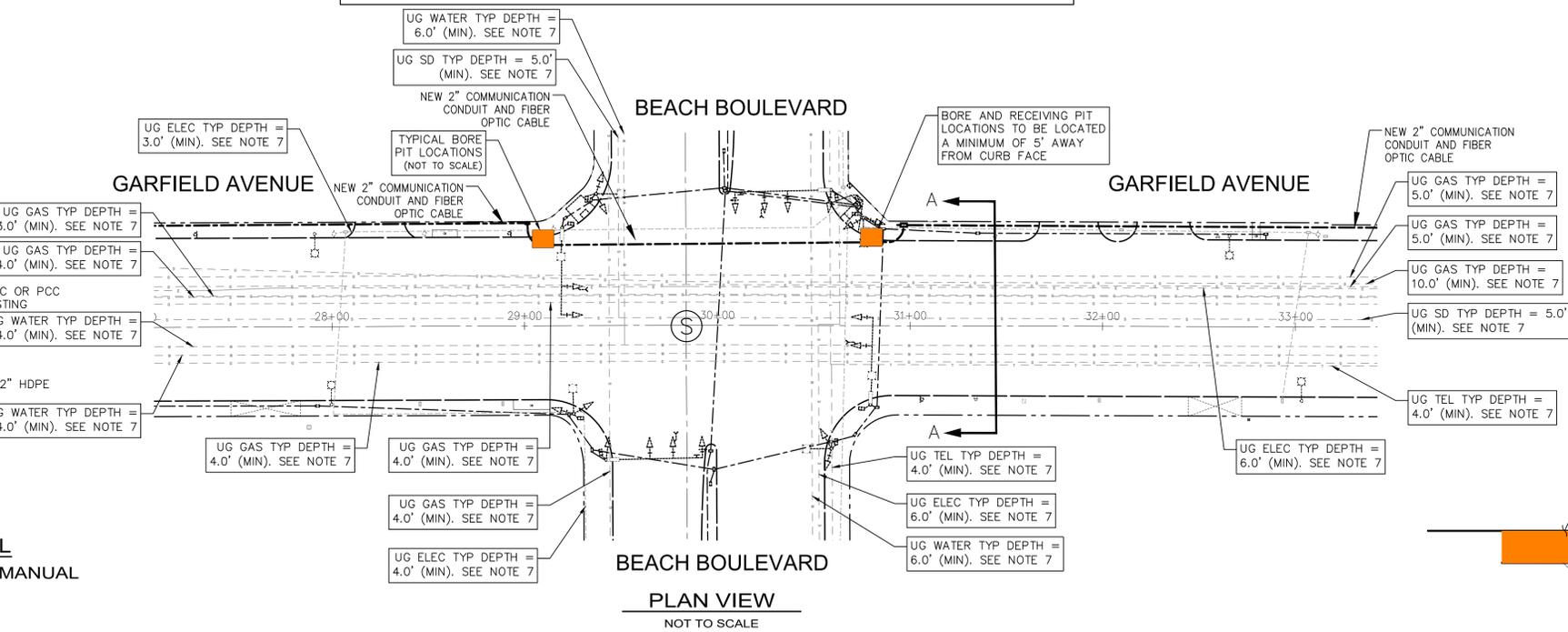


FIBER OPTIC COMMUNICATION PLAN
CONSTRUCTION DETAILS
 PULL BOX AND CONDUIT

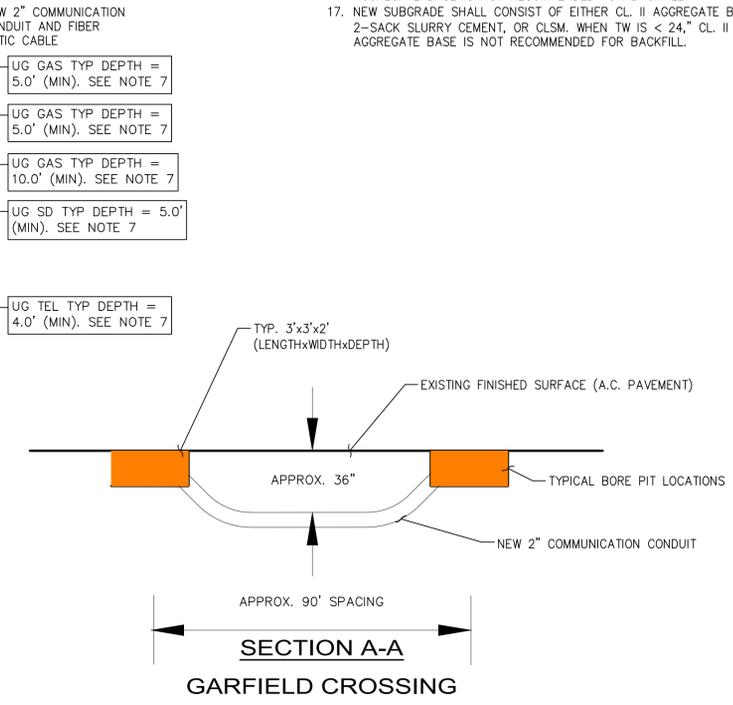
**GARFIELD AVENUE FROM HUNTINGTON STREET TO NEWLAND STREET
TYPICAL CONDUIT INSTALLATION - JACK AND BORE METHOD**



TRENCH IN PAVEMENT DETAIL
PER CALTRANS ENCROACHMENT PERMIT MANUAL
TYPICAL TRENCH DETAIL TR-1053
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



SECTION A-A
GARFIELD CROSSING

NOTES (FOR TRENCH IN PAVEMENT)

- STRUCTURE BACKFILL SHALL CONFORM TO SECTION 19-3.06 OF THE STANDARD SPECIFICATIONS.
- SLURRY CEMENT BACKFILL SHALL CONFORM TO SECTION 19-3.062 OF THE STANDARD SPECIFICATIONS.
- HMA SHALL CONFORM TO SECTION 39 OF THE STANDARD SPECIFICATIONS.
- ALL METHODS OF COMPACTION SHALL BE BY MECHANICAL MEANS. PONDING, JETTING OR FLOODING SHALL NOT BE ALLOWED.
- AGGREGATE BASE SHALL CONFORM TO SECTION 26 OF THE STANDARD SPECIFICATIONS.
- WHEN CLSM IS UTILIZED THE MIX DESIGN AND TEST RESULTS SHALL BE SUBMITTED TO CALTRANS REPRESENTATIVE.
- ALL WORK SHALL BE AS AUTHORIZED BY THE APPROVED ENCROACHMENT PERMIT PLANS, AND/OR AS DIRECTED BY CALTRANS REPRESENTATIVE.
- WHEN THE UW IS > 6" THEN THE MINIMUM CLR SHALL BE 6" COLD PLANING AND RE-SURFACING OVERLAY SHALL BE PARALLEL TO THE ROADWAY AND TO THE NEAREST LANE LINE FOR THE ENTIRE LENGTH OF THE TRENCH/DISTURBED AREAS, AND/OR AS DIRECTED BY CALTRANS REPRESENTATIVE.
- WHEN COLD PLANING IS REQUIRED, THE MINIMUM SHALL BE 0.10" OR AS DIRECTED BY THE STATE'S REPRESENTATIVE TO ACCOMMODATE FIELD CONDITIONS.
- COLD PLANING MAY BE REQUIRED AT THE DIRECTION OF THE STATE'S REPRESENTATIVE TO ACCOMMODATE THE PLACEMENT OF STEEL PLATES.
- WHEN TRENCH PLACEMENT IS WITHIN 4' OF CURB & GUTTER, ADDITIONAL COLD PLANING MAY BE REQUIRED AT THE DISCRETION OF CALTRANS REPRESENTATIVE.
- ANY PAVEMENT MARKINGS AND/OR STRIPING REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AS DIRECTED BY CALTRANS REPRESENTATIVE.
- A TRACER WIRE SHALL BE PLACED ON TOP OF THE FACILITY, WHEN REQUIRED BY CALTRANS REPRESENTATIVE.
- OTHER TRENCH RELATED DETAILS ARE SHOWN IN FIGURE 6.1, CHAPTER 6 OF THE ENCROACHMENT PERMITS MANUAL.
- A PAINT BINDER (TACK COAT) OF ASPHALTIC EMULSION CONFORMING TO SECTION 39-4.02, PRIME COAT & PAINT BINDER (TACK COAT) SHALL BE FURNISHED AND APPLIED.
- NEW PAVEMENT BASE SHALL CONSIST OF EITHER CL II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS < 24,"CL II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.
- NEW SUBGRADE SHALL CONSIST OF EITHER CL II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS < 24," CL II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.

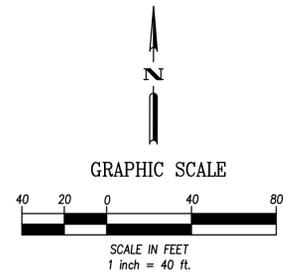
GENERAL NOTES (WITHIN CALTRANS ROW)

- ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND STANDARD SPECIFICATIONS, CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF HUNTINGTON BEACH SPECIAL PROVISIONS, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) AND AS DIRECTED BY THE CITY REPRESENTATIVE.
- LOCATION OF UTILITIES AND SUBSTRUCTURES HAVE BEEN SHOWN FROM A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811, AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING UTILITIES.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL AFFECTED AGENCIES AND UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
- BACKFILLING OF EXCAVATIONS AND TRENCHES SHALL COMPLY WITH 2018 CALTRANS STANDARD SPECIFICATIONS SECTION 19-3.03E STRUCTURE BACKFILL, SECTION 19-3.03F SLURRY CEMENT BACKFILL AND SECTION 20-2.01C(2) TRENCHING AND BACKFILLING.
- WHEN THE TRENCH WIDTH IS LESS THAN 2' THE BACKFILL FOR SUBGRADE MUST CONSIST OF EITHER SLURRY CEMENT OR CONTROLLED LOW-STRENGTH MATERIAL (CLSM). SEE APPENDIX H PAGE H-27 OF THE CALTRANS ENCROACHMENT PERMITS MANUAL FOR CLSM SPECIFICATIONS.
- WHEN BACKFILLING OPERATIONS OF AN EXCAVATION CANNOT BE COMPLETED WITHIN A WORK DAY, STEEL PLATE BRIDGING WITH A NON-SKID SURFACE SHALL BE REQUIRED AS PER SECTION 602.1 TEMPORARY STEEL PLATE BRIDGING WITH NON-SKID SURFACE OF CALTRANS ENCROACHMENT PERMIT MANUAL.
- THE CONTRACTOR SHALL POTHOLE ALL UTILITIES SHOWN AND NOT SHOWN ON PLANS. THE CONTRACTOR SHALL ALSO POTHOLE ALL UTILITIES MARKED BY UNDERGROUND SERVICE ALERT. THE CONTRACTOR SHALL VERIFY ELEVATIONS OF ALL UTILITIES WHERE THE PROPOSED IMPROVEMENTS AND NEW CONDUIT WILL BE INSTALLED. THE ELEVATIONS OF THESE EXISTING UTILITIES SHALL BE SHOWN IN A POTHOLE REPORT FORMAT, AND ON THE PROJECT PLAN(S). THIS MUST BE PROVIDED TO CALTRANS REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO STARTING THE WORK. THE COST OR THE POTHOLING REQUIRED SHALL BE INCLUDED IN THE CONTRACT BID PRICE.
- THE CONTRACTOR SHALL REPLACE EXISTING DECORATIVE SIDEWALK IN-KIND FROM SCORE LINE TO SCORE LINE. LIMITS OF SIDEWALK REPLACEMENT SHALL BE APPROVED BY THE ENGINEER.
- THE CONTRACTOR/PERMITEE MUST PROVIDE A COPY OF THE BORE-LOG SHOWING HORIZONTAL AND VERTICAL ALIGNMENT (DEPTH). A BORE-LOG MUST BE KEPT FOR BOTH THE PILOT AND THE REAMING PROCESS. THESE RECORDS MUST BE PROVIDED TO CALTRANS REPRESENTATIVE DAILY. UPON COMPLETION OF THE WORK, THE CONTRACTOR/PERMITEE MUST PROVIDE AN ACCURATE "AS-BUILT" DRAWING OF THE INSTALLED PIPE.
- CONDUIT USED FOR HORIZONTAL DIRECTIONAL DRILLING MUST BE HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT SHALL BE TYPE IPS, DR 9 AND COMPLY WITH ASTM F714. THE CONDUIT MATERIAL MUST COMPLY WITH ASTM D3350.
- TRACER WIRE MUST BE A MINIMUM NO. 12 SOLID COPPER CONDUCTOR WITH ORANGE INSULATION TYPE TW, THW, RHW OR USE.

LEGEND

- UG = UNDERGROUND
- ELEC = ELECTRICAL LINE
- TEL = TELEPHONE LINE
- SD = STORM DRAIN LINE
- W = WATER LINE
- G = GAS LINE
- TS = TRAFFIC SIGNAL
- TYP = TYPICAL
- MIN = MINIMUM

NOTICE TO CONTRACTOR
THE PERMITEE MUST PROVIDE A COPY OF THE BORE-LOG SHOWING HORIZONTAL AND VERTICAL ALIGNMENT (DEPTH). A BORE-LOG MUST BE KEPT FOR BOTH THE PILOT AND THE REAMING PROCESS. THESE RECORDS MUST BE PROVIDED TO CALTRANS REPRESENTATIVE DAILY. UPON COMPLETION OF THE WORK, THE PERMITEE MUST PROVIDE AN ACCURATE "AS-BUILT" DRAWING OF THE INSTALLED PIPE.



CALTRANS ENCROACHMENT PERMIT #XXX-XXX-XXXX

Underground Service Alert
Call: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS				
REV.	DATE	BY	DESCRIPTION	APP'D

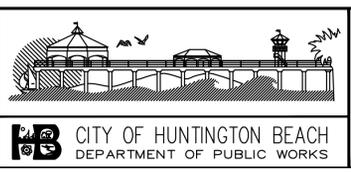
REFERENCES	

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
Tel: (949) 861-4999
Fax: (949) 502-5522
www.advantec-usa.com

DRAWN BY: MO/NP 06/17/22
DESIGNED BY: MO/JAD 06/17/22
CHECKED BY: JAD 06/17/22

PREPARED UNDER THE SUPERVISION OF:
JOHN A. DORADO II, PE
R.C.E. NO.: 74405 EXP. DATE: 09/30/23

REVIEWED BY:
TRANSPORTATION ENGINEERING DATE



**FIBER OPTIC COMMUNICATION PLAN
CONSTRUCTION DETAILS
JACK AND BORE METHOD**