



TOPEKA METRO

**REQUEST FOR BIDS
Concrete Pads for Bus Stops
Phase 9 Group 4
TO-20-20**

**Appendix III
Engineering Studies**

TOPEKA METRO, TOPEKA KANSAS
BUS STOPS
PHASE 9.4

KANSAS ONE-CALL
1-800-DIG-SAFE
(1-800-344-7233)

Protect yourselves and your property against underground utility damage and liability.
Find out where the underground utility lines might be buried before you dig.

Anyone digging in Kansas must call before digging. The person who is doing the work is responsible for calling KOC. If the owner contracts with a professional excavator to do the excavation then the professional excavator is responsible for calling KOC.

You (the digger) will need to provide information about the work site when you call. This is a FREE service.

CALL BEFORE YOU DIG
IT'S THE LAW.
[Chapter 66.--PUBLIC UTILITIES
Article 18.--UTILITY DAMAGE PREVENTION]



UTILITY OWNERS

Cable TV
Cox Communications
931 SW Henderson Rd.
Topeka, KS 66615
John Hanas
(785)215-6705

Electric
Westar Energy
122 SW 2nd St.
Topeka, KS 66603
Allyson Wetter
(785)575-1221

Fiber Optic - City of Topeka
City of Topeka, Info. Tech.
620 SE Madison, 3rd Fl.
Topeka, KS 66607
Mark Biswell
(785)368-3718

Fiber Optic- USD 501
USD 501, Info. Tech.
1900 SW Hope St.
Topeka, KS 66604
Dickie Hanson
(785)438-4750

Fiber Optic-KSFiberNet
Kansas Fiber Network LLC
10875 Benson, Suite 250
Overland Park, KS 66210
Brad Burger
(913)213-2937

Gas
Kansas Gas Service
P.O. Box 3538
200 E 1st St.
Topeka, KS 66601
Dawn Hecker
(785)431-4251
For Gas Leaks 1-888-482-4950
911 must also be called immediately

Sanitary/Storm Sewer
City of Topeka, WPC Div.
1115 NE Poplar St.
Topeka, KS 66616
Darren A. Coffland
(785)368-2467

Telephone
AT&T
220 SE 6th St., Rm 360
Topeka, KS 66603
Daniel Chase
(785)276-6147

Traffic Signal
City of Topeka, Traffic Ops.
927 NW Harrison St.
Topeka, KS 66612
Duane Morris
(785)368-3913

Water
City of Topeka, Eng. Div.
620 SE Madison St. Unit 7
Topeka, KS 66607
Duncan Theuri
(785)368-0152

GENERAL NOTES:

- All Construction Methods and Materials Used in the Construction of the Improvements Covered by these Plans Shall be in Accordance with the Project Specifications and the City of Topeka and Shawnee County Standard Technical Specifications, Latest Addition, on File at the City of Topeka Engineer's Office.
- The Location of All Underground Utilities May Vary from what is Indicated on These Plans. It Shall be the Contractor's Responsibility to Coordinate with Utility Owner to Locate and Flag All Underground Utilities Whether Indicated or Not. No Excavation Shall be Permitted in the Area of Underground Utilities Until All Such Utilities Have Been Located and Identified to the Satisfaction of All Parties. Any Damage to the Utility Shall be Repaired or Replaced by the Utility Company at the Expense of the Contractor.
- The Cross Slope on All Sidewalks Shall Not Exceed 2%.
- All Property Pins Disturbed By Construction Shall be Replaced by a Professional Land Surveyor. This Work Shall be Performed at the Expense of the Contractor.
- Full Depth Sawcuts Shall be Used to Remove a Portion of Pavement or Curb and Gutter. All Sawcuts Shall be Full Depth and Shall be Performed at the Expense of the Contractor.
- New Signs shall Comply with Required Clearance from Sidewalk, Public Right of Way and Comply with Required Sight Distance.
- The Contractor is required to obtain a Traffic Disruption permit from the City of Topeka Engineering Division (785 368-3842) a minimum of 48 hours in advance of any work that will restrict or disrupt pedestrian or vehicular travel in the public right-of-way. All traffic control shall conform to the Manual on Uniform Traffic Control Devices and City of Topeka standards.

LEGEND

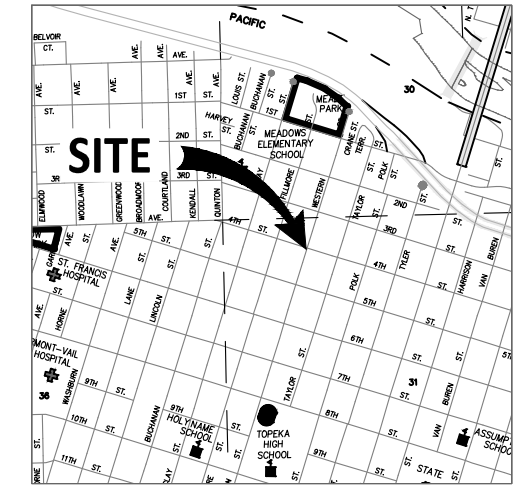
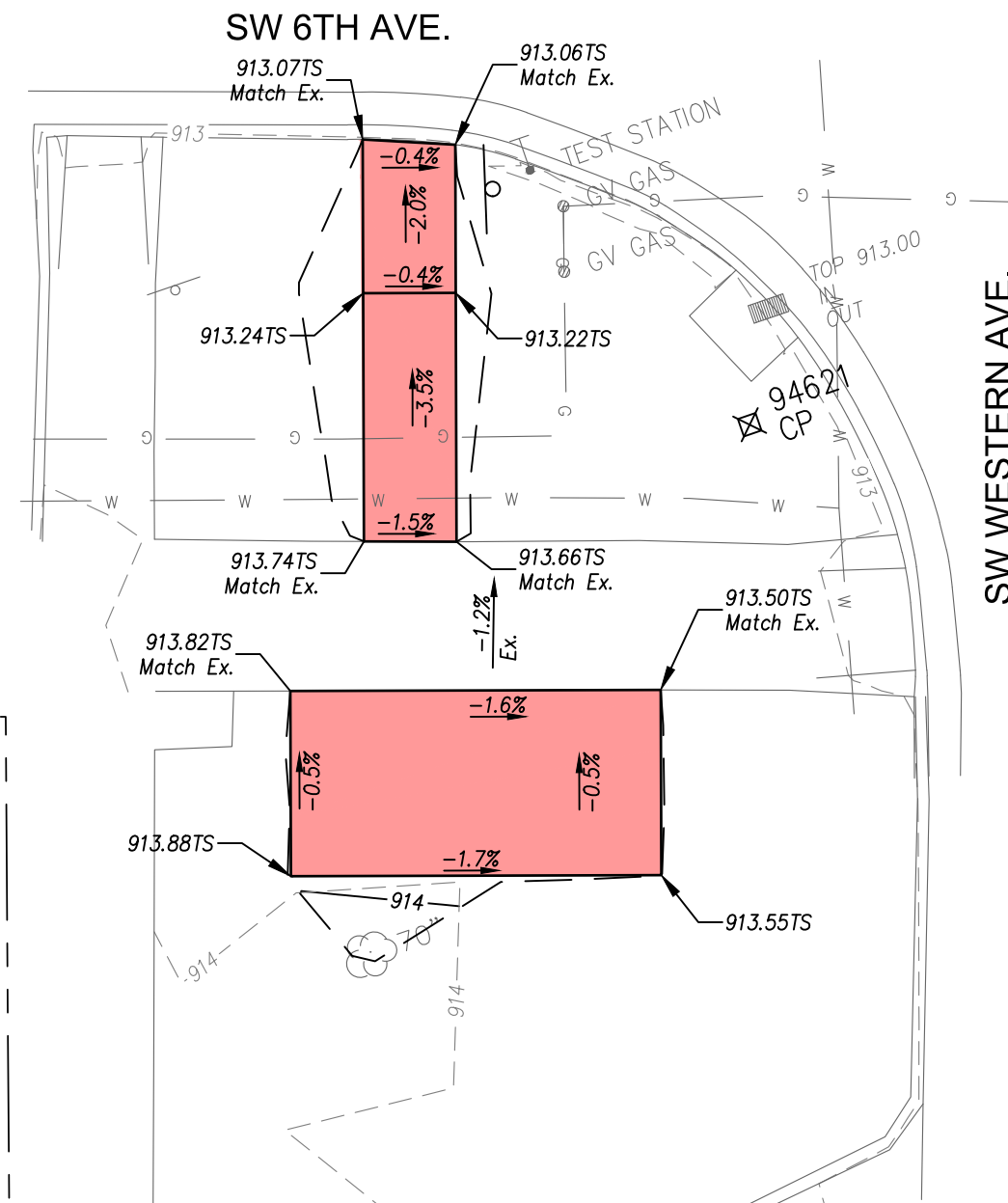
Telephone Pedestal	Manhole
Telephone Manhole	Water Hydrant
Electric Manhole	Tree
Storm Sewer Manhole	Fire Hydrant
Sanitary Sewer Manhole	Water Line
Traffic Signal Manhole	Gas Line
Traffic Signal Pole	Telephone Line
Gas Meter	Underground Electric
Water Meter	Sanitary Sewer Line
Water Valve	Sanitary Sewer Line
Power Pole	Brush & Timber
Gas Valve	Light Pole
Iron Pin Set	Guy Wire
Iron Pin Found	Section Corner

PLANS PREPARED BY:



TITLE SHEET
PHASE 9.4

DATE: Jan. 2020
SHEET:
PROJ.: 19-5044



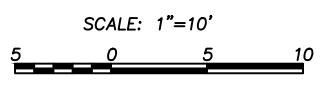
CONTROL 155044 PH 9.4
NAD 83 KRCS ZONE 11
NAVD 88

CP 94621 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 583754.7190 E: 11376501.4330 EL: 913.37

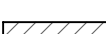
1) TO SOUTH B/C 6TH ST EXT 15.5' N
2) TO WEST B/C WESTERN ST EXT 9.0' E
3) TO S/W COR CURB INLET 6.7' NW
4) TO NORTH EDGE WALK 6.5' S

CP 94622 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 583729.1590 E: 11376614.0660 EL: 915.66

1) TO SOUTH B/C 6TH ST 3.5' N
2) TO EAST B/C WESTERN ST EXT 75.0' W
3) TO @ BASE LP 48.3' WNW
4) IN @ PHARMACY BLDG TO SOUTH (#821)



LEGEND

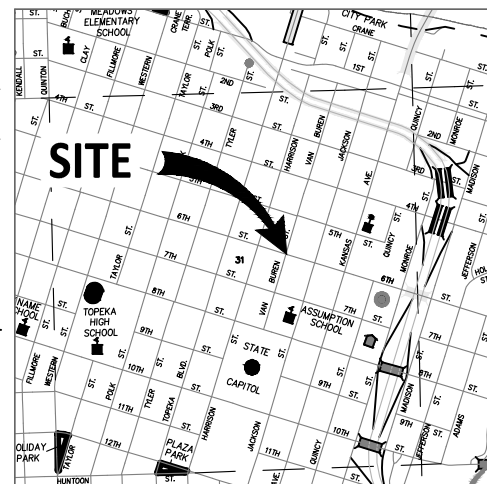
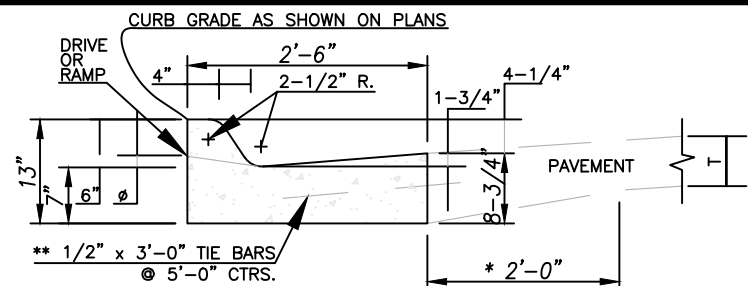
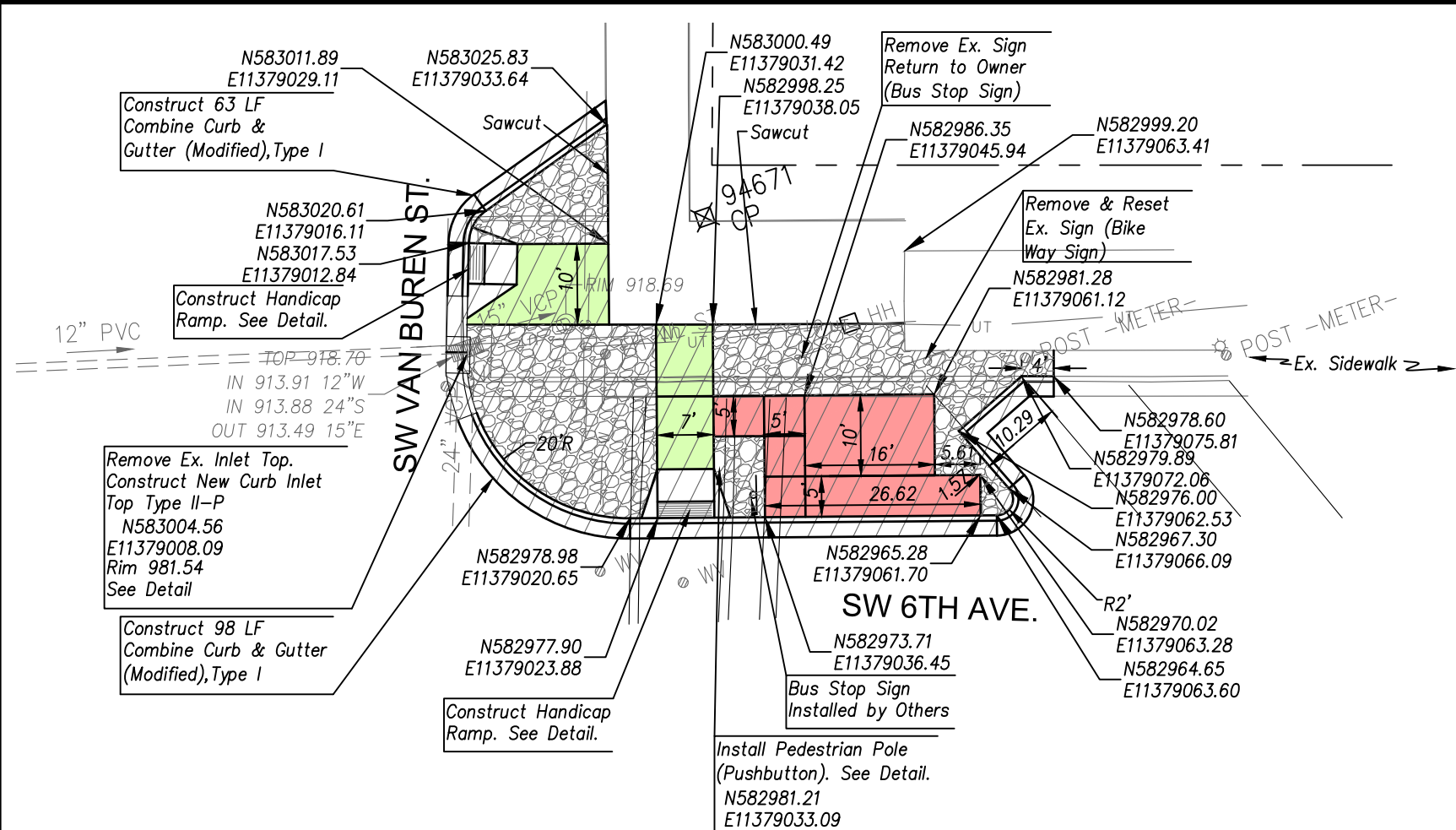
-  – Large Tree Removal
-  – Construct Reinforced Conc. Pad
-  – Construct 5" Non-Reinforced Pad w/ 4" AB-3
-  – Conc. Sidewalk Removal
-  – Construct 4" Conc. Sidewalk

TP	Top of Pavement
TS	Top of Sidewalk
TC	Top of Curb
TW	Top of Wall

Note:
1. All grading side slopes shall be a 6:1 unless noted on plan.

**SW 6th AVE. &
SW WESTERN AVE. (IB)(SW)**
(Sm. Shelter, Trash Can
& Bike Rack)

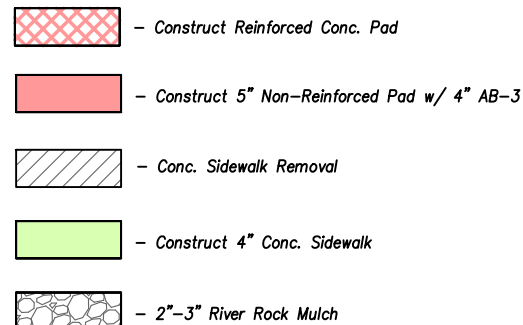
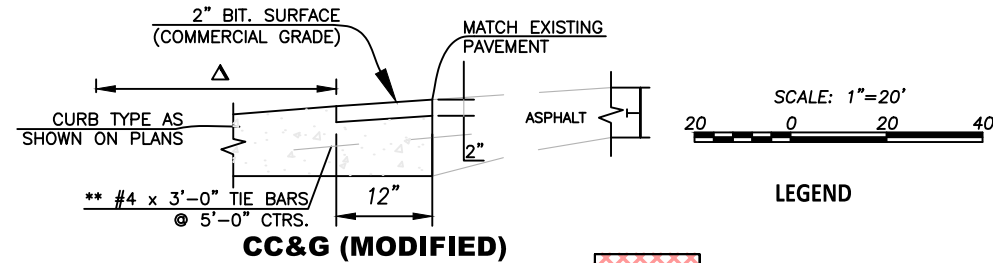
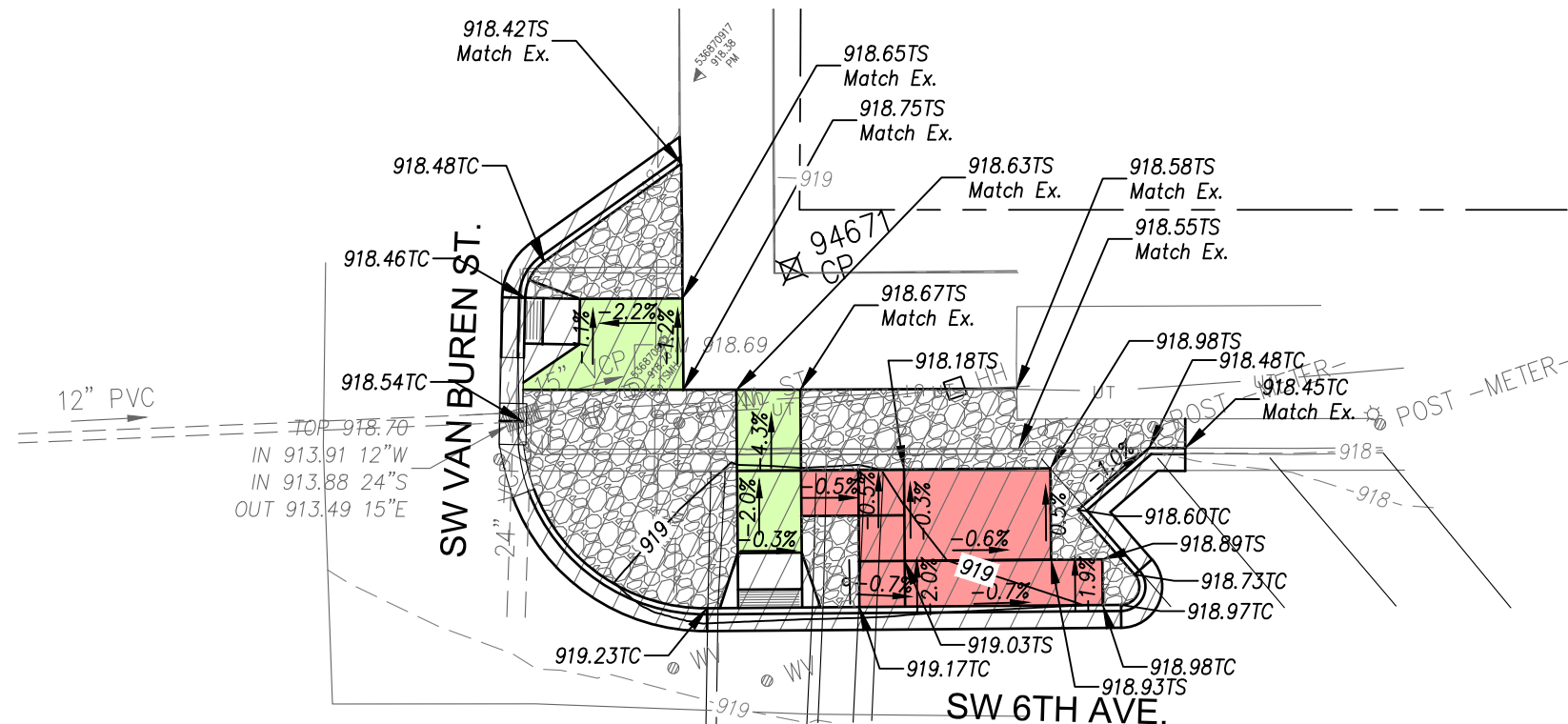
NOTE: TMTA, Phase 9.4	
CFS PROJECT # 15-5044	DATE: 1/2/20
PROJECT MANAGER: KH	SHEET OF 1



CONTROL 155044 PH 9.4
NAD 83 KRCS ZONE 11
NAVD 88

CP 94671 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 583011.0990 E: 11379041.4150 EL: 919.12
1) TO NORTH B/C 6TH ST 19.7' S
2) TO PARKING CURB PI W-N 11.9' WNW
3) TO TOP OF KEY FH 20.5' SW
4) TO BASE BUS STOP SIGN 20.8' SE

CP 94672 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 583134.4640 E: 11379083.3610 EL: 917.60
1) TO EAST B/C VAN BUREN EXT 28.3' W
2) TO ALLEY TO EAST 10.0' N
3) TO BASE LP 22.6' SW
4) TO MH 19.5' NW



TP Top of Pavement
TS Top of Sidewalk
TC Top of Curb
TW Top of Wall

Note:

- All grading side slopes shall be a 6:1 unless noted on plan.
- Rock mulch shall be placed over pin weed barrier fabric. Mulch shall be 4" thick. Elevation of top of rock shall be 1/4" below any adjacent pavement. Coordinate with Owner.

**SW 6TH AVE. &
SW VAN BUREN ST. (OB)(NE)**
(Small Shelter)

CFS ENGINEERS
cfse.com
2930 SW Woodside Dr. Topeka, KS 66614
o: 785-272-4706 f: 785-272-4736

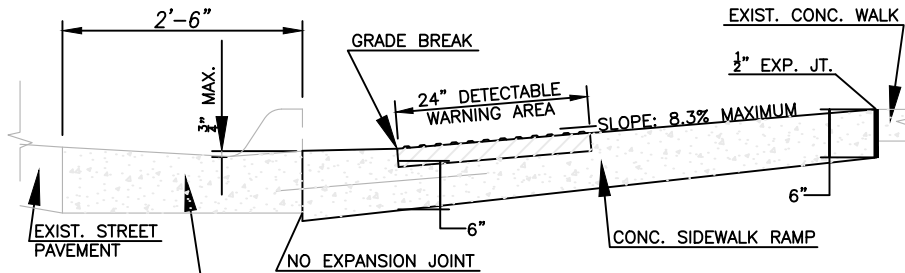
NOTE: TMTA, Phase 9.4
CFS PROJECT # 15-5044 DATE: 1/2/20
PROJECT MANAGER: KH SHEET 1 OF 7

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J:\2019Proj\155044 (2019 PH 9.4)\CADD\Design\155044base ph 9.4.dwg, 6th & VanBuren details, 4/9/2020 12:03:18 PM

- SIDEWALK RAMPS SHALL BE CONSTRUCTED USING 6" THICK PAVEMENT CLASS CONCRETE (4000 PSI) AS DETAILED IN THE STANDARD TECHNICAL SPECIFICATIONS.
- EXPANSION JOINTS SHALL BE SEALED WITH APPROVED JOINT SEALANT WHERE SIDEWALKS AND DRIVE ENTRANCES (COMMERCIAL AND RESIDENTIAL) INTERSECT WITH PAVEMENT CURB.
- DETECTABLE WARNING SYSTEMS SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
- THE TRUNCATED DOME AREA SHALL BE A MAXIMUM WIDTH OF THE SIDEWALK RAMP OR MEDIAN RAMP. WIDER MEDIAN ISLANDS WILL RESULT IN A GAP BETWEEN THE TRUNCATED DOME AREAS.
- THE TRUNCATED DOME AREA SHALL BE A CONTRASTING COLOR TO THE ADJACENT SURFACES.
- DETECTABLE WARNING PANELS SHALL NOT BE CUT. BRICKS MAY BE SAW CUT BUT ANY BRICK SHALL NOT BE LESS THAN 25% OF A FULL BRICK.
- THE ADA SOLUTIONS CAST IN PLACE DETECTABLE WARNING PANELS, ARMORCAST DETECTABLE WARNING PANELS, PAVESTONE DETECTABLE WARNING PAVERS OR APPROVED EQUAL SHALL BE USED IN ALL SIDEWALK RAMPS.
- DETECTABLE WARNING SYSTEMS SHALL BE PLACED ALONG THE BACK OF CURB OR AT A MAXIMUM DISTANCE OF 5 FEET FROM BACK OF CURB.
- TRUNCATED DOMES SHALL BE ALIGNED WITH THE DIRECTION OF TRAVEL, OR MAY BE PLACED ON RADIAL LINES IN RADIUS TACTILE PATTERNS.
- MORTAR SAND SHALL MEET THE REQUIREMENTS IN THE STANDARD SPECIFICATIONS.
- THE SIDEWALK RAMP WILL BE BID AS "SIDEWALK RAMP" AND PAYMENT FOR THIS WORK WILL BE MEASURED BY THE SQUARE FOOT, MAXIMUM 6 FEET CENTERLINE PAY LENGTH.
- ALL MATERIALS AND LABOR TO INSTALL THE SIDEWALK RAMP SHALL BE SUBSIDIARY TO THE BID ITEM "SIDEWALK RAMP".

SPECIAL REQUIREMENTS FOR SIDEWALK RAMP CONSTRUCTION

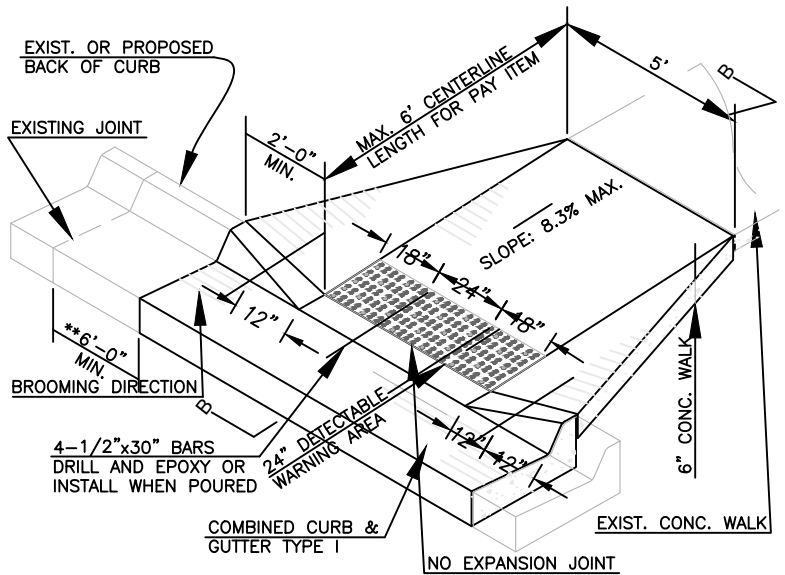
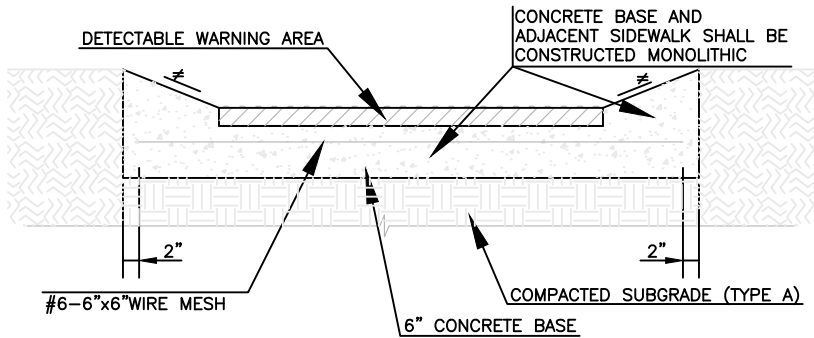
- NOTES:
1. RAMP TO BE PAID FOR AS SIDEWALK RAMP. CURB AND GUTTER TO BE INCLUDED IN THE PRICE BID FOR COMBINED CURB AND GUTTER TYPE I.
2. SIDEWALK RAMP SHALL OBTAIN A MINIMUM OF 6" ABOVE ℓ FOR NEW SIDEWALK CONSTRUCTION.



SECTION B-B
SIDEWALK RAMP DETAILS

SECTION A-A TYPICAL SECTION OF DETECTABLE WARNING SYSTEM

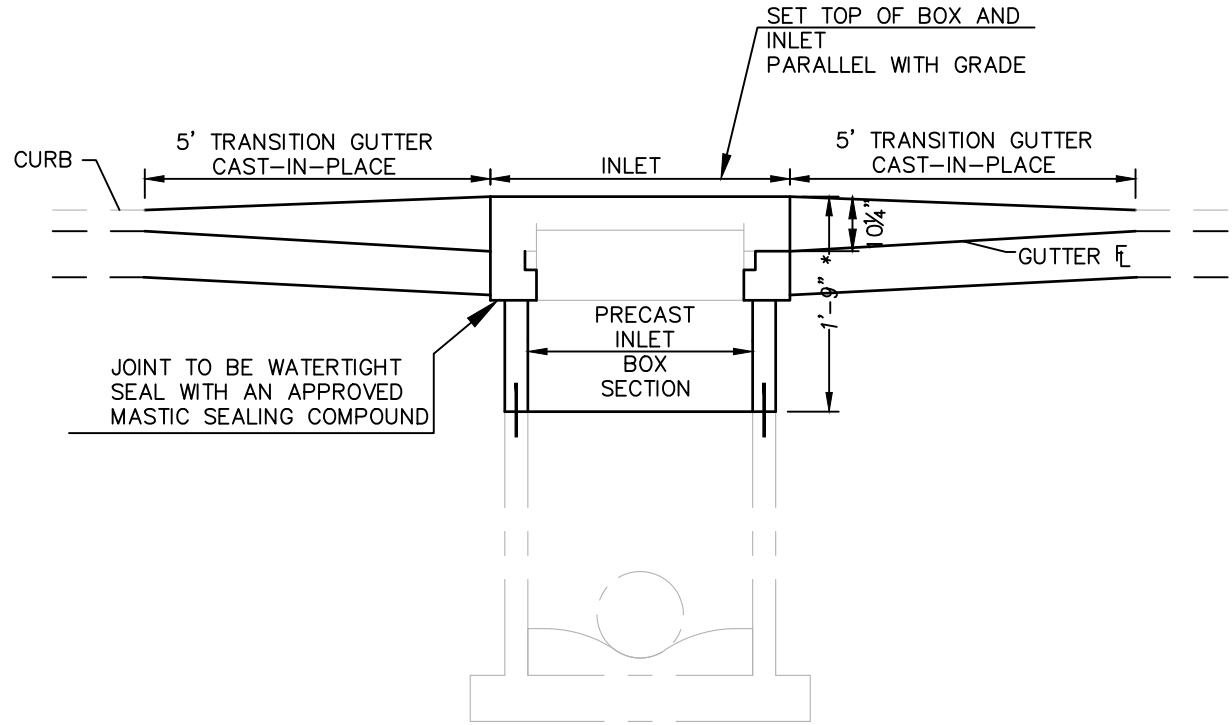
≠ 10:1 MAXIMUM AT PAVED FAN AREA, 4:1 AT STANDARD RAMP



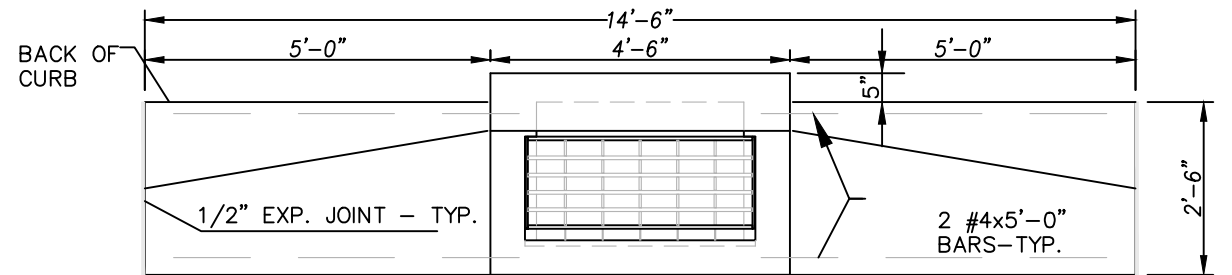
ISOMETRIC OF RAMP WITH PERPENDICULAR WALK SHOWN

SIDEWALK (RESIDENTIAL AND COMMERCIAL) CONSTRUCTION

- SIDEWALKS SHALL BE CONSTRUCTED USING 4" THICK CONCRETE, EXCEPT AT DRIVEWAY CROSSINGS, WHERE IT SHALL BE 6" THICK PAVEMENT CLASS CONCRETE, 4000 PSI (RESIDENTIAL) OR 8" THICK PAVEMENT CLASS CONCRETE, 4000 PSI (COMMERCIAL).
- FINE GRADING MATERIAL SHALL BE CRUSHED ROCK AB-3. ALLOWABLE MAXIMUM COMPACTED THICKNESS OF AB-3 SHALL BE 6".
- SAND IS NOT AN APPROVED FILL, SUBGRADE, OR FINE GRADING MATERIAL UNDER PAVEMENT, SIDEWALKS, RAMPS, OR DRIVEWAYS.
- ALL SIDEWALKS AND RAMPS WITHIN PUBLIC RIGHTS-OF-WAY SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).



CURB AND GUTTER BETWEEN THESE LIMITS TO BE INCLUDED IN THE PRICE BID FOR INLET



PLAN

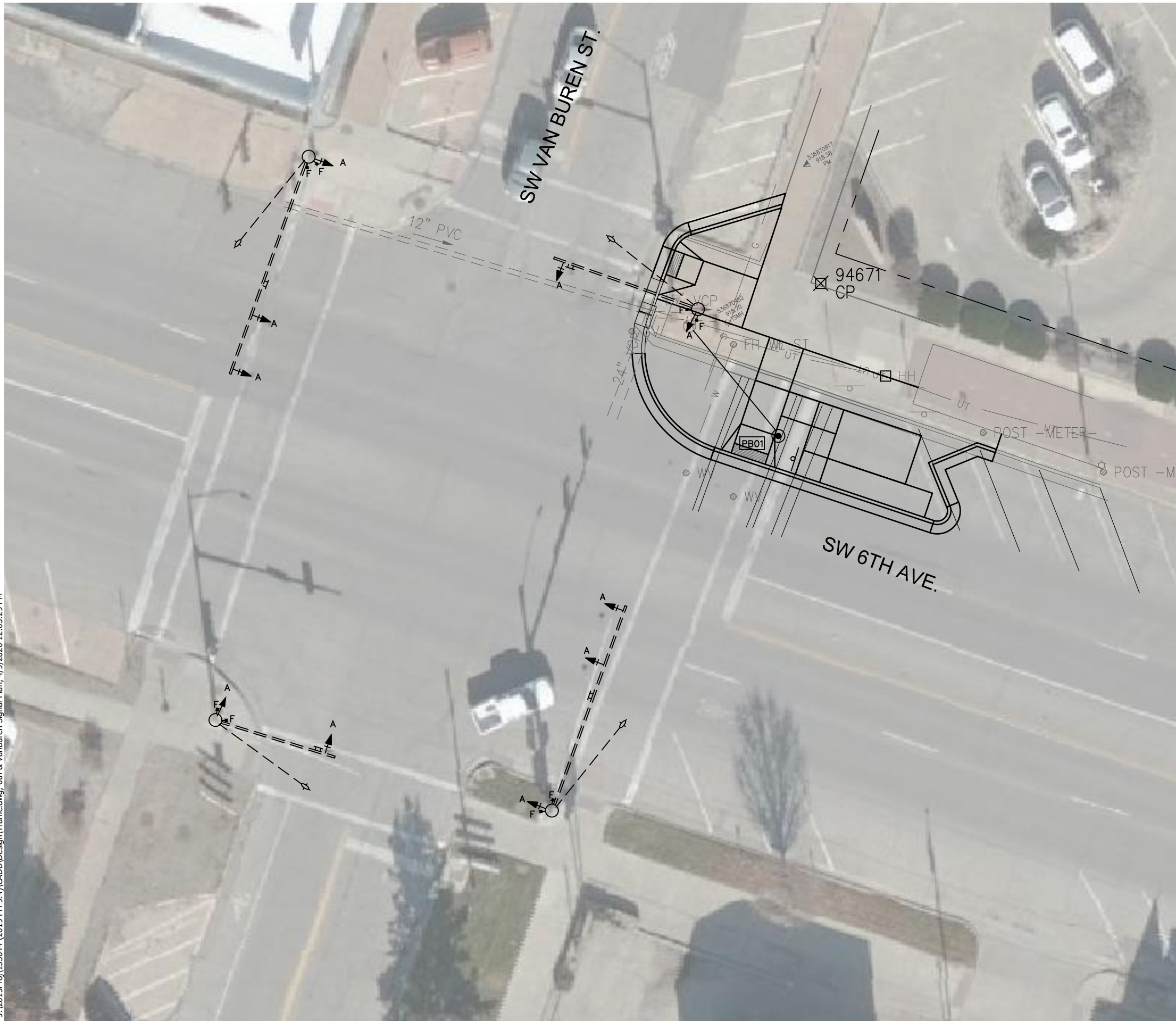
TYPE II-P INLET TOP DETAIL

SCALE: NTS

INLET REPAIR: The bid item "Remove & Replace Inlet Top" shall include removal of the existing inlet top, removal of designated portion of the inlet walls, reinforcing steel, drilling & grouting, concrete, steel castings, saw cuts, excavation and backfill and any other incidentals necessary to complete the work as shown in the details or required to complete the repair. Inlet tops may be precast or cast in place. All concrete shall be Structural Class AE and all reinforcing steel shall be Grade 60. Precast Tops will be grouted at joint line.

SW 6TH AVE. &
SW VAN BUREN ST. (OB)(NE)
(Small Shelter)

CFS ENGINEERS	
cfse.com	2930 SW Woodside Dr, Topeka, KS 66614 o: 785-272-4706 f: 785-272-4736
NOTE: TMTA, Phase 9.4	
CFS PROJECT # 15-5044	DATE: 1/2/20
PROJECT MANAGER: KH	SHEET 2 OF 7



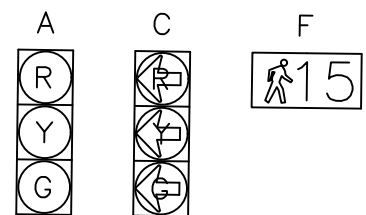
NOTES:

1. Call Duane Morris, City of Topeka Street Supervisor at (785) 36-3913 before modifying existing traffic signals.
2. The location of existing underground utilities are shown in an approximate way only and have not been independently verified. The contractor shall be responsible for contacting all utility companies for locations of all underground lines prior to excavation and be fully responsible for any and all damages, which might be occasioned by the Contractor's failure to exactly locate and preserve any and all underground utilities.
3. All signal poles, cameras, detection zones, junction boxes, controllers and service boxes shall be field located by the contractor and verified by the Engineer prior to installation.
4. Any conduit to be installed under existing paved areas shall be bored.
5. Factory Conduit bends shall be installed into the service boxes, junction boxes and/or pole bases from conduit runs. Conduit entering service boxes, junction boxes and/or pole bases shall be continuous into the service box, junction box or pole base. Conduit shall enter service boxes from the bottom.
6. All work and equipment shall conform to the latest edition of the City of Topeka Standard Specifications and standard details for Traffic signal.
7. Traffic Control Officer may be required during switch over to new signals.
8. All appurtenances necessary for construction, installation and functionality of the proposed Pedestrian Pole shall be subsidiary to bid item Pedestrian Pole w/ Pushbutton.

SCALE: 1"=20'
20 0 20 40

SYMBOLS

- ① - Pedestrian Pole Number
- ② - Service Box Number
- ② - Service Box Number(existing)
- ② - Pole Number
- B - Signal Head Type
- 27 - Signal Head Number
- PB03 - Push Button Number
- P03 - Pedestrian Head Number

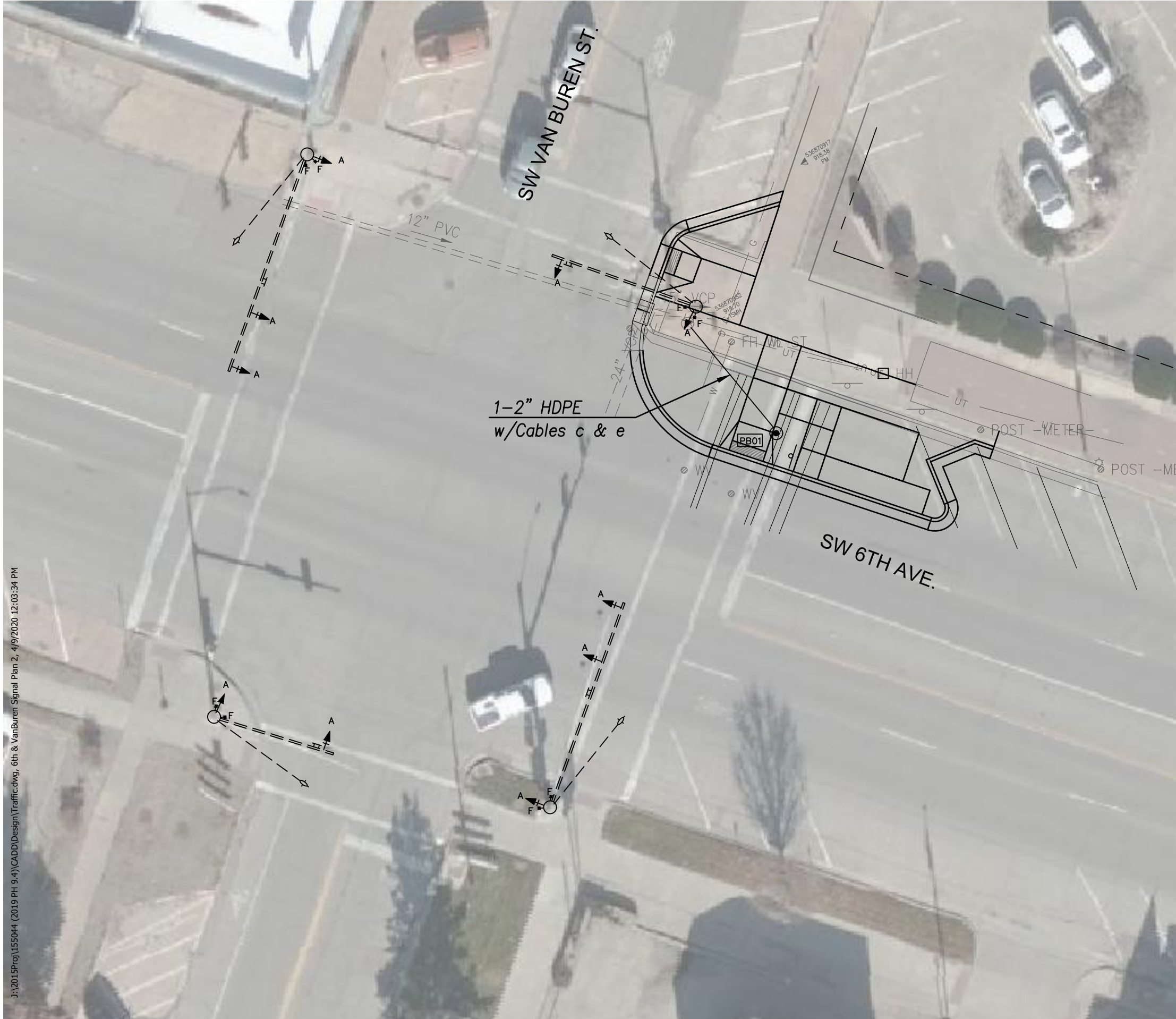


LEGEND

- Video Camera
- Sign Mounted to Mast Arm
- Controller
- Pedestrian Head
- Traffic Signal Pedestal
- Service Box
- Junction Box
- Signal
- Signal with Backplate
- Luminaire
- Conduit
- Mastarm Pole
- Video Detection Zone

SW 6TH AVE. &
SW VAN BUREN ST. (OB)(NE)
SIGNAL PLAN

CFS ENGINEERS	
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NOTE: TMTA, Phase 9.4	
CFS PROJECT # 15-5044	DATE: 1/2/20
PROJECT MANAGER: KH	SHEET 3 OF 7



SIGNAL CABLE & WIRING LEGEND

SIGNAL	LIGHTS	CABLE	COND.	CABLE	CONDUCTOR
PB01 (N-S)	ON COMMON	Cable B 2c#14AWG	BLACK WHITE	CABLE #1 2c#14AWG	BLUE/WHITE STRIPE WHITE/BLACK STRIPE

CONDUIT INSTALLATION

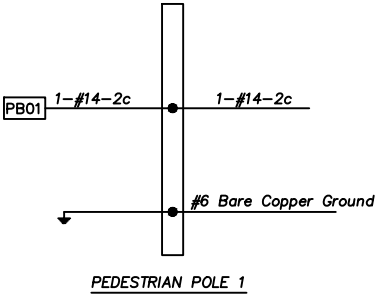
FROM	TO	EST. QUAN.	SIZE
EX. Manhole	Pedestal #1	30'	2"

ALL PUSH BUTTONS TO HAVE 1-2/c#14AWG PULLED TO EACH FROM BASE.

ALL CONDUIT SHALL BE HDPE. CONDUIT FROM POLE BASE OR PEDESTAL BASE TO FIRST SERVICE BOX MAY BE REPLACED WITH PVC SCHEDULE 40.

WIRING LEGEND

- Cable 1,2,3, or 4 – Multiconductor Cable #14 AWC 20/C IMSA20-1
- a – Multiconductor Cable #14 AWC 5/C IMSA 20-1
- b – Luminaire Wire #10 AWC 2/C w/ Ground
- c – Power Wire (BARE) #6 AWC 1/C (Ground)
- d – Camera Video and Power Cable (CAT. 5) *
- e – Pushbutton Wire #14AWG 2/C
- f – Power Lead in Wire #6 USE 2/C
- g – Interconnect Communications Fiber Optic Cable Ofsoptics Part # AT-3BE12YT-024



SYMBOLS

- ① – Pedestrian Pole Number
- ② – Service Box Number
- ③ – Pole Number
- B – Signal Head Type
- 27 – Signal Head Number
- PB03 – Push Button Number
- P03 – Pedestrian Head Number

SW 6TH AVE. &
SW VAN BUREN ST. (OB)(NE)
SIGNAL PLAN

CFS ENGINEERS

cfse.com

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o: 785-272-4706 f: 785-272-4736

NOTE: TMTA, Phase 9.4

CFS PROJECT # 15-5044

PROJECT MANAGER: KH

DATE: 1/2/20

SHEET 4 OF 7

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1. The Contractor shall supply and install all necessary materials and equipment for the complete and satisfactory operation of the traffic signal system whether materials and equipment are specifically mentioned or not.
2. The contractor shall be responsible for the complete wiring of intersection. All field wires shall be labeled.
3. The Contractor shall be a licensed electrical contractor of Topeka and shall obtain a "WILL CALL PERMIT" from the City of Topeka Building Inspection division prior to construction. A copy of the "WILL CALL PERMIT" shall be forwarded to the Engineer by the contractor. The Building Inspection Division may be reached at 368-3905. Request for electrical inspection shall be made one day before it is needed. A licensed journeyman electrician is required to perform the actual service connection and is required to be on the job site at the time of field inspection. An Excavation permit will be required from the Permit Section at 368-3704.

BILL OF MATERIALS SYMBOLS

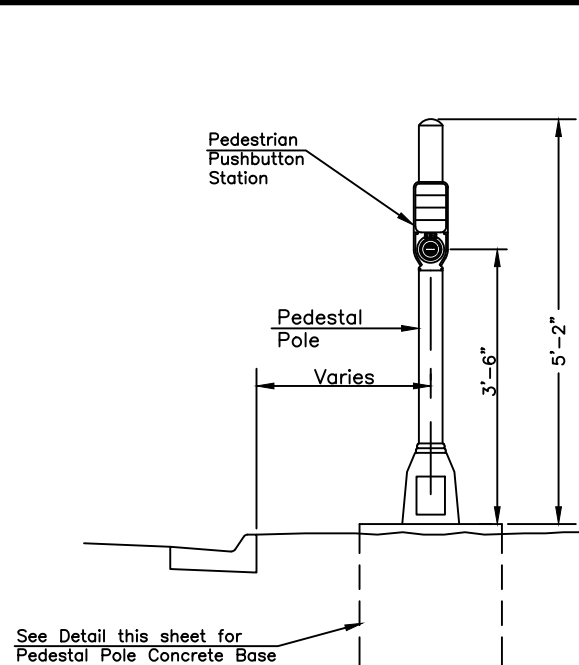
☆ = Cable shall be continuous from each camera to the controller.	⊗⊗ = When Black Semi Gloss is indicated, all exposed surfaces of the traffic signal and it's appurtenances, including cabinets, brackets, banding, buckles, back-plates, sign backs, and fixtures shall have a finish color of BLACK (semi-gloss) Federal Standard 595 Color #27038 or approved equivalent. If fixtures or appurtenances such as detection cameras or radios are not standardly available with a black finish, they may be supplied with the manufacture's standard finish and delivered to the City for painting prior to installation. Poles, pedestals & cabinets shall be powder coated.
++ = Supplied by the city, installed by the contractor assisted by the supplier.	
⊕ = Supplied and installed by the City of Topeka.	
● = Pulled in after signal wire has been pulled.	

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PEDESTAL MOUNTED PUSHBUTTON STATION

Technical drawing of a pole base plate showing top and side views.

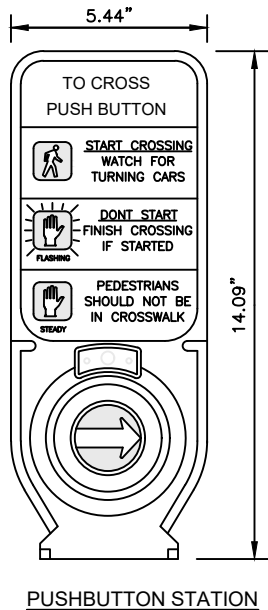
Top View:

- Circle with radius $15'' R.$
- Text: "Bolt Pattern to be determined by bidded poles."
- Label: **TOP VIEW**

Side View:

- Labels: Flat Washer, Pole Base Plate
- Text: "Conduit extensions above base shall have a plastic or metal rim pushing to prevent the chafing of cables."
- Text: "#6 bare copper ground conductor from internal grounding nut to clamp on ground rod"
- Dimensions:
 - 24"
 - 2"
 - 30" Dia.
 - 12" (Approx.)
 - 1" Conduit
 - 30"
 - 5/8" x 8' Ground Rod
- Labels: Traffic Signal Cable, Conduit
- Text: "(See plans for size required)"
- Label: **Grade Line**

PEDESTAL POLE **CONCRETE BASE DETAILS**



Note: Pedestrian Pushbutton Station to be equipped with a Braille message to read as follows:

TO CROSS
PUSH BUTTON
WAIT FOR WALK SIGN

1. Pushbutton station shall be supplied with pre-recorded message as directed by the City.
2. Contractor in conjunction with Supplier of pushbutton station will ensure proper installation for correct operation.
3. The pushbutton station shall be attached to the signal pole. A hole shall be drilled in the pole.

1. EXISTING OPERATION: THE CONTRACTOR SHALL PROVIDE CONTINUOUS OPERATION OF THE TRAFFIC SIGNALS DURING THE SIGNAL MODIFICATIONS AND IMPROVEMENTS EXCEPT FOR SHUTDOWNS TO ALLOW FOR ALTERATIONS AS REQUIRED FOR INSTALLATION OF THE PROPOSED IMPROVEMENTS.
2. PERIODS OF DISRUPTION: SOME PERIODS OF DISRUPTION OF EXISTING SIGNAL OPERATION CAN BE TOLERATED DURING INSTALLATION OF THE PROPOSED IMPROVEMENT; HOWEVER, THE CONTRACTOR SHALL COORDINATE ANY PLANNED DISRUPTION OF SIGNAL OPERATIONS WITH THE ENGINEER A REASONABLE TIME IN ADVANCE OF SUCH DISRUPTION OF OPERATIONS.
3. DISRUPTION TIMES: PLANNED DISRUPTION OF SIGNAL OPERATIONS SHALL BE LIMITED TO HOURS BETWEEN 9:00 AM AND 4:00 PM. THE SIGNAL CONTROLS SHALL BE OPERABLE DURING ALL OTHER PERIODS.
4. EXISTING WIRING: ALL EXISTING WIRING WITHIN EXISTING CONTROLLER CABINETS SHALL BE IDENTIFIED BY THE CONTRACTOR AND EACH CONDUCTOR PROPERLY LABELED PRIOR TO DE-ENERGIZING THE EXISTING CONTROLLER TO INSTALL THE PROPOSED MODIFICATIONS AND IMPROVEMENTS.

SALVAGED EQUIPMENT

1. REINSTALLED: WHEN SALVAGED EQUIPMENT IS TO BE REINSTALLED, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY MATERIALS AND EQUIPMENT INCLUDING ANCHOR BOLTS, NUTS, WASHERS, CONCRETE, ETC. REQUIRED TO COMPLIMENT THE SALVAGED EQUIPMENT IN THE NEW INSTALLATION.
2. SERVICE BOXES AND JUNCTION BOXES IN TURF AREAS SHALL BE COMPLETELY REMOVED. HOLES ARE TO BE FILLED AND COMPACTED WITH SELECT SOIL. JUNCTION BOXES IN PAVED AREAS SHALL HAVE LID AND WIRING REMOVED AND FILLED WITH CONCRETE OR ASPHALT.
3. AFTER COMPLETION WIRING TO BE REMOVED IF POSSIBLE AND CONDUIT TO BE ABANDONED IN PLACE.

1. SYSTEM TURN-ON: THE SIGNAL SYSTEM TURN-ON SHALL NOT OCCUR ON FRIDAYS, WEEKENDS, OR HOLIDAYS AND SHALL BE COMPLETED PRIOR TO 3:00 PM ON THE DAY OF THE TURN-ON.
2. SUPPLIER REPRESENTATIVE: THE SUPPLIER OF CONTROL EQUIPMENT SHALL HAVE A REPRESENTATIVE PRESENT AT THE SIGNAL SYSTEM TURN-ON.
3. A CITY SIGNAL TECHNICIAN WILL BE AT TURN-ON. CALL 785-368-3913 TO ARRANGE SHOULD TURN-ON TAKE LONGER THAN ONE HOUR DUE TO CONTRACTOR ERROR, THE CONTRACTOR WILL BE BILLED FOR EACH ADDITIONAL HOUR AT A RATE OF \$50.00 PER HOUR.

THE CONCRETE SHALL BE CURED WITH AN APPROVED MOISTURE BARRIER SUCH AS WET BURLAP OR POLYETHYLENE FOR A PERIOD OF 72 HOURS. COLD WEATHER CURING SHALL BE SUCH THAT THE CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE FREEZING FOR THE ENTIRE CURING PERIOD. DO NOT ATTACH POLES UNTIL THE CONCRETE HAS CURED FOR 14 DAYS. THE POLES CAN BE INSTALLED AFTER 7 DAYS IF THE CYLINDER BREAKS AT AT LEAST 3500 PSI.

GENERAL: EACH PEDESTRIAN PUSH BUTTON STATION SHALL CONSIST OF ONE OR TWO PARTS. IF TWO PARTS ONE CONSISTS OF A ONE PIECE PUSHBUTTON ASSEMBLY, SPEAKER AND DIRECTIONAL SIGN. PART TWO CONSISTS OF A POWER SUPPLY AND CONTROL UNIT FOR THE PUSHBUTTON ASSEMBLY LOCATED IN THE ASSOCIATED PEDESTRIAN HEAD. THE BUTTONS, RELATED HARDWARE AND AUDIBLE SIGNAL SHALL BE COMPLIANT WITH THE AMERICANS WITH DISABILITIES ACT.

THE PUSHBUTTON ASSEMBLY SHALL HAVE AN ADA COMPLIANT VIBRATING WEATHERPROOF
PUSHBUTTON WITH AN ARROW INDICATION MOLDED INTO THE BUTTON.

WHERE TWO ACCESSIBLE PUSHBUTTONS ON THE SAME CORNER OF THE INTERSECTION ARE SEPARATED BY A DISTANCE OF AT LEAST TEN (10) FEET, THE AUDIBLE WALK INDICATION SHALL BE A PERCUSSIVE TONE. WHERE TWO ACCESSIBLE PEDESTRIAN PUSHBUTTONS ON THE SAME CORNER OF THE INTERSECTION ARE NOT SEPARATED BY A DISTANCE OF AT LEAST TEN (10) FEET, THE AUDIBLE WALK INDICATION SHALL BE A VOICE MESSAGE. WHEN THERE IS ONLY ONE ACCESSIBLE PEDESTRIAN PUSHBUTTON ON THE CORNER, THE AUDIBLE WALK INDICATION SHALL BE A VOICE MESSAGE.

POWER SUPPLY AND CONTROL UNIT: THE POWER SUPPLY AND CONTROL UNIT SHALL CONSIST OF A UNIT APPROXIMATELY 7" X 4" AND BE LOCATED IN THE ASSOCIATED PEDESTRIAN HEAD FOR THE PUSHBUTTON ASSEMBLY THAT IT CONTROLS OR BUILT INTO PUSHBUTTON UNIT. THE UNIT WILL HAVE FOUR INPUTS ON A BARRIER DIVIDED TERMINAL STRIP. THESE INPUTS WILL BE FOR GROUND, WALK, DON'T WALK, AND AC NEUTRAL. THE UNIT WILL HAVE FOUR OUTPUTS ON A BARRIER DIVIDED TERMINAL STRIP. THESE OUTPUTS WILL BE FOR DC+ AND DC- OR 12VDC POWER, WALK OUTPUT, AND DON'T WALK OUTPUT. THE OUTPUTS SHALL BE CONNECTED TO THE PUSHBUTTON ASSEMBLY BY A FOUR WIRE CABLE. THE UNIT SHALL BE FUSED USING TWO 0.5 AMP FUSES OR MOV 5 JOULES. THE UNIT WILL BE CONFORMABLY COATED FOR DIRT AND MOISTURE PROTECTION AND SHALL HAVE A 5 YEAR WARRANTY FROM DATE OF INSTALLATION.

1. GENERAL: STEEL TRAFFIC SIGNAL POLES SHALL CONFORM TO SUBSECTIONS 1605 AND 1606 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS ON THE PLAN. THE POLES AND ARMS SHALL BE TAPERED MONOTUBE MADE ONLY OF ONE LENGTH OF STRUCTURAL STEEL SHEET OF NOT LESS THAN NO. 7 MANUFACTURING STANDARD GAUGE MEETING THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATION A595 "SPECIFICATION FOR STEEL TUBES, LOW-CARBON, TAPERED FOR STRUCTURAL USE". AS AN ACCEPTABLE ALTERNATIVE, THE POLES AND ARMS SHALL HAVE A MINIMUM OF 12 SIDES MADE ONLY OF ONE LENGTH OF STRUCTURAL STEEL SHEET OF NOT LESS THAN NO. 7 MANUFACTURING STANDARD GAUGE MEETING THE REQUIREMENTS OF THE LATEST EDITION OF THE ASTM SPECIFICATION A570 "SPECIFICATION FOR STRUCTURAL QUALITY HOT-ROLLED CARBON STEEL SHEET AND STRIP" OR A572 "SPECIFICATION FOR HIGH-STRENGTH LOW-ALLOY COLUMBIUM-VANADIUM STEELS OF STRUCTURAL QUALITY" WITH A MINIMUM YIELD STRENGTH OF 55 KILO POUNDS PER SQUARE INCH AND A MAXIMUM SILICONE CONTENT OF 0.06 PERCENT. ONLY ONE LONGITUDINAL WELD, AND NO TRAVERSE WELDS, SHALL BE PERMITTED IN THE FABRICATION OF THE SHAFT OR ARM. (EXCEPTION: MULTIPLE GAUGE ARMS DESIGNED FOR LENGTHS OF 40 FEET OR GREATER MAY HAVE BOLTED TELESCOPIC FIELD JOINTS SO AS TO DEVELOP FULL STRENGTH OF THE ADJACENT SHAFT SECTIONS TO RESIST BENDING ACTION.)

3. AS NOTED IN ASTM 123 SECTION 9 - IT IS THE RESPONSIBILITY OF THE POLE MANUFACTURER TO ENSURE COMPLIANCE WITH THIS SPECIFICATION. THIS SHALL BE ACHIEVED BY AN IN-PLANT INSPECTION PROGRAM DESIGNED TO MAINTAIN THE COATING THICKNESS, FINISH, AND APPEARANCE WITHIN THE REQUIREMENTS OF THIS SPECIFICATION.

5. RENOVATIONS SHOULD BE MADE IN ACCORDANCE WITH ASTM 780 "REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS". RENOVATIONS TO BE COMPLETED WITH ZINC BASED SOLDERS, PAINTS CONTAINING ZINC DUST OR SPRAYED ZINC AS DESCRIBED IN THIS ASTM.

1. GENERAL: ALUMINUM TRAFFIC SIGNAL PEDESTALS SHALL CONSIST OF A CAST ALUMINUM BASE. THE SHAFT SHALL BE SPUN FROM ONE PIECE OF SEAMLESS TUBING, MEETING THE REQUIREMENTS OF SUBSECTION 1626.02(b)(2) OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS HAVING A MINIMUM NOMINAL 0.125 INCH WALL THICKNESS. THE SHAFT SHALL HAVE NO LONGITUDINAL WELDS NOR CIRCUMFERENTIAL WELDS. ALL PEDESTALS SHALL HAVE THE SHAFT ATTACHED TO THE BASE WITH A ROUND ALUMINUM COLLAR ASSEMBLY WITH STAINLESS STEEL HARDWARE.

D. GENERAL

E. METALLIC CONDUIT AND FITTINGS

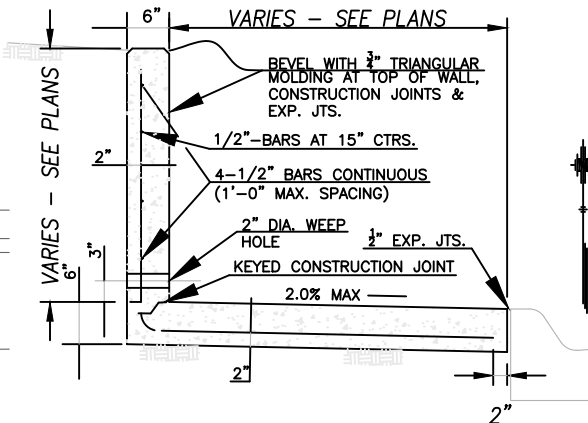
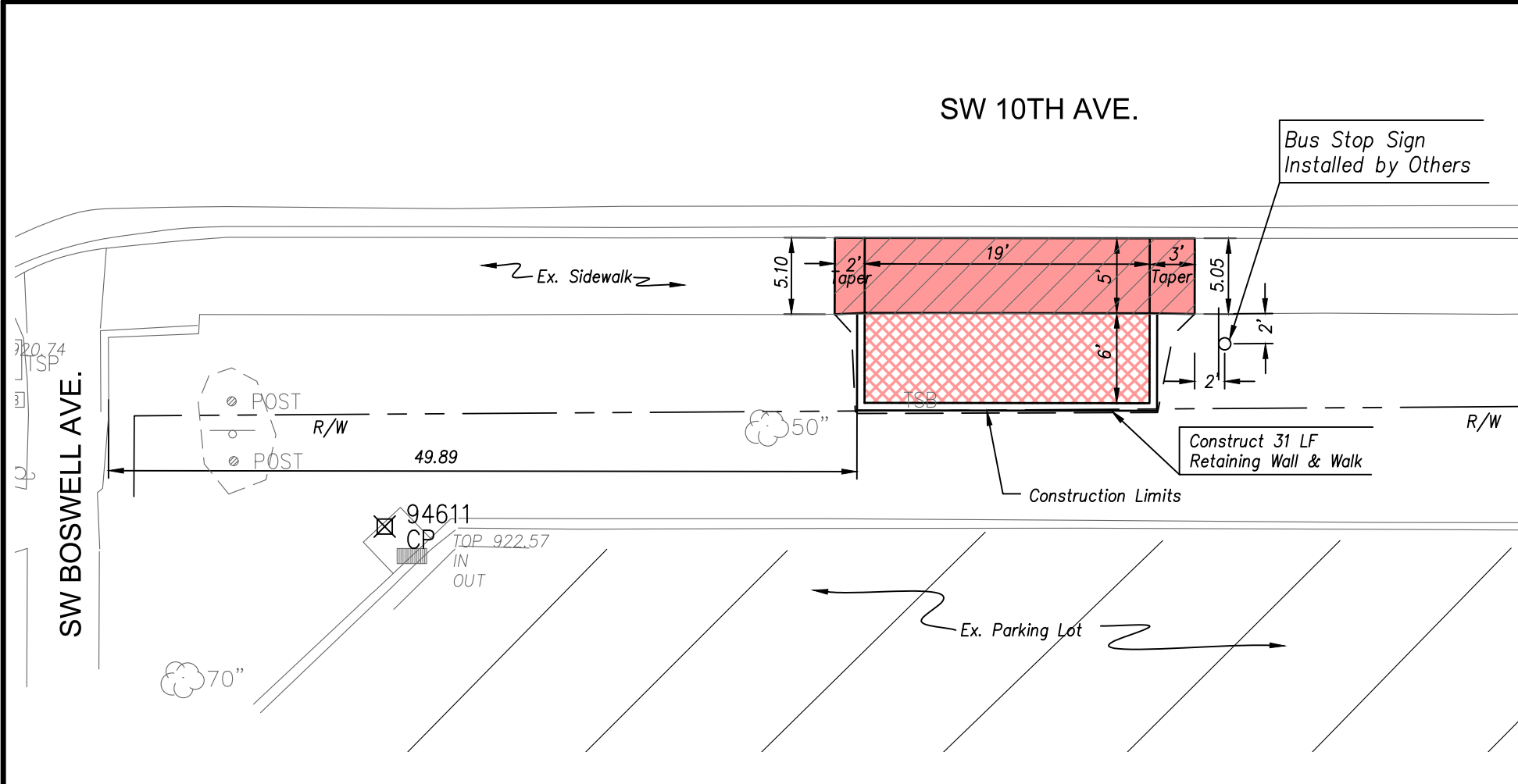
2. FITTINGS: METALLIC CONDUIT FITTINGS SHALL BE ZINC COATED AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE SPECIFICATION C80.4 "SPECIFICATION FOR FITTINGS FOR RIGID METAL CONDUIT AND ELECTRICAL METALLIC TUBING".

F. NONMETALLIC CONDUIT AND FITTINGS

2. FITTINGS: METALLIC CONDUIT FITTINGS SHALL BE FABRICATED FROM POLYVINYL CHLORIDE HAVING THE SAME CHEMICAL AND PHYSICAL PROPERTIES AS THE CONDUIT WITH WHICH IT IS TO BE USED. EACH SHALL BEAR THE UNDERWRITERS' LABORATORY, INC. LABEL. THE JOINTS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.

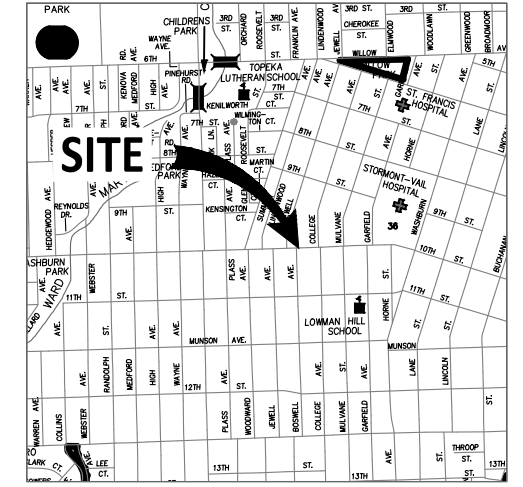
SW 6TH AVE. & SW VAN BUREN ST. (OB)(NE) BILL OF MATERIALS	CFS ENGINEERS cfse.com 2330 SW Woodside Dr, Topeka, KS 66614 ☎ 785-272-4706 f 785-272-4735 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td colspan="2" style="padding: 2px;">NOTE: TMTA, Phase 9.4</td> </tr> <tr> <td style="width: 50%; padding: 2px;">CFS PROJECT # 15-5044</td> <td style="width: 50%; padding: 2px;">DATE: 1/2/20</td> </tr> <tr> <td style="padding: 2px;">PROJECT MANAGER: KH</td> <td style="padding: 2px;">SHEET 7 OF 7</td> </tr> </table>	NOTE: TMTA, Phase 9.4		CFS PROJECT # 15-5044	DATE: 1/2/20	PROJECT MANAGER: KH	SHEET 7 OF 7
NOTE: TMTA, Phase 9.4							
CFS PROJECT # 15-5044	DATE: 1/2/20						
PROJECT MANAGER: KH	SHEET 7 OF 7						

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J:\2019Proj\155044 (2019 PH 9.4)\CADD\Design\155044base ph 9.4.dwg, 10th & Boswell, 4/9/2020 12:02:57 PM



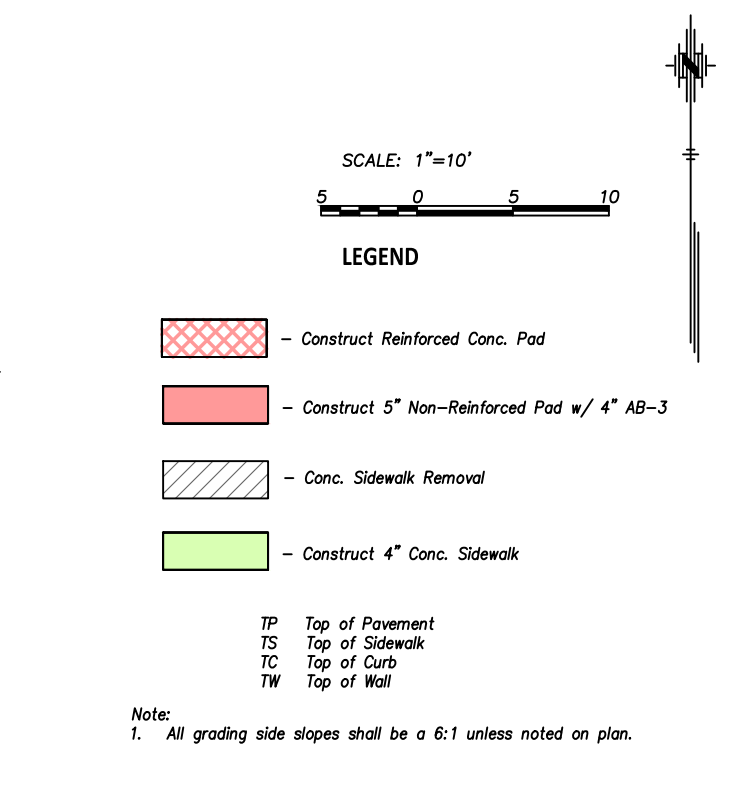
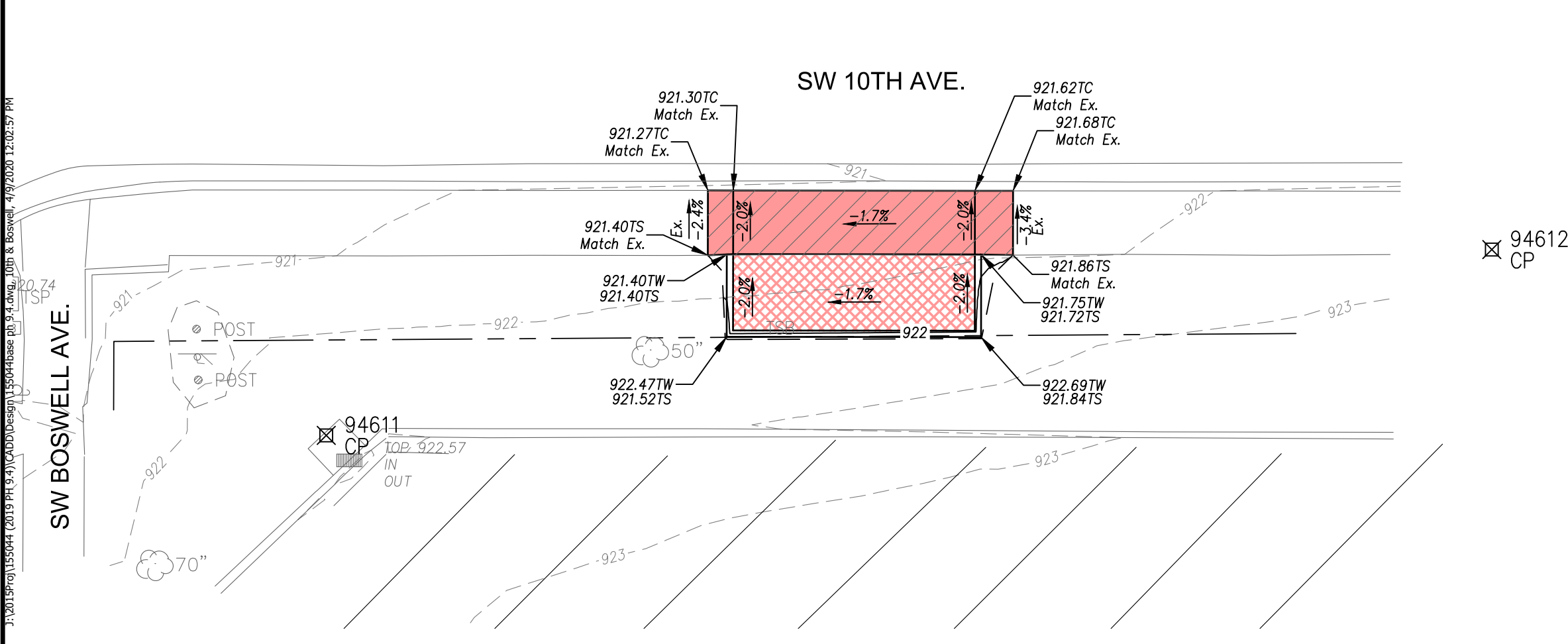
RETAINING WALL & WALK DETAILS

NOTE:
▶ THIS TYPE OF WALL MAY BE USED TO A MAXIMUM HEIGHT OF 3'-0".
▶ WEEP HOLES AT A MAXIMUM OF 15' CENTER TO CENTER WITH COARSE AGGREGATE PLACED AT EACH WEEP HOLE 18" IN ALL DIRECTIONS ABOVE FLOW LINE.
▶ CONCRETE SHALL BE CLASS "A" THROUGHOUT WITH GRADE 40 REINFORCING.
▶ PLACE 1/2" HARDWARE SCREEN AT WEEP HOLES TO RETAIN AGGREGATE.



VICINITY MAP
NO SCALE

- CONTROL 155044 PH 9.4
NAD 83 KRCS ZONE 11
NAVD 88
- CP 94611 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 582566.5290 E: 11371827.4510 EL: 922.55
1) TO SOUTH B/C 10TH ST 19.3' N
2) TO EASE B/C BOSWELL 31.8' W
3) TO C BASE 50" TREE 26.5' ENE
4) TO C BASE PED XING POLE 27.8' WNW
- CP 94612 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 582581.1330 E: 11371919.0900 EL: 922.58
1) TO SOUTH B/C 10TH ST 4.6' N
2) TO C ALLEY TO SOUTH 24.0' E
3) TO C BASE LP 6.3' NE
4) TO C BASE 50" TREE 66.5' WSW



**SW 10th AVE. &
SW BOSWELL AVE. (IB)(SE)**
(Bench, Trash Can & Bike Rack)

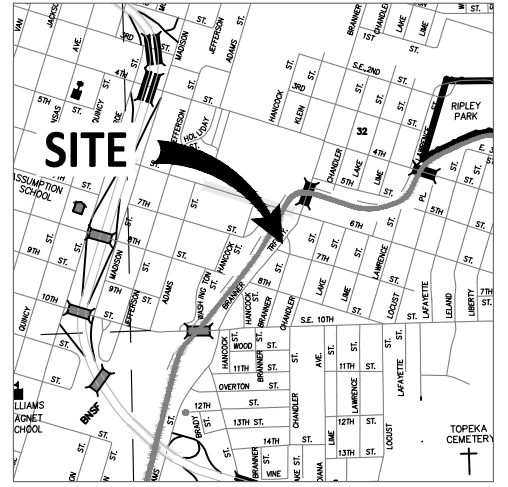
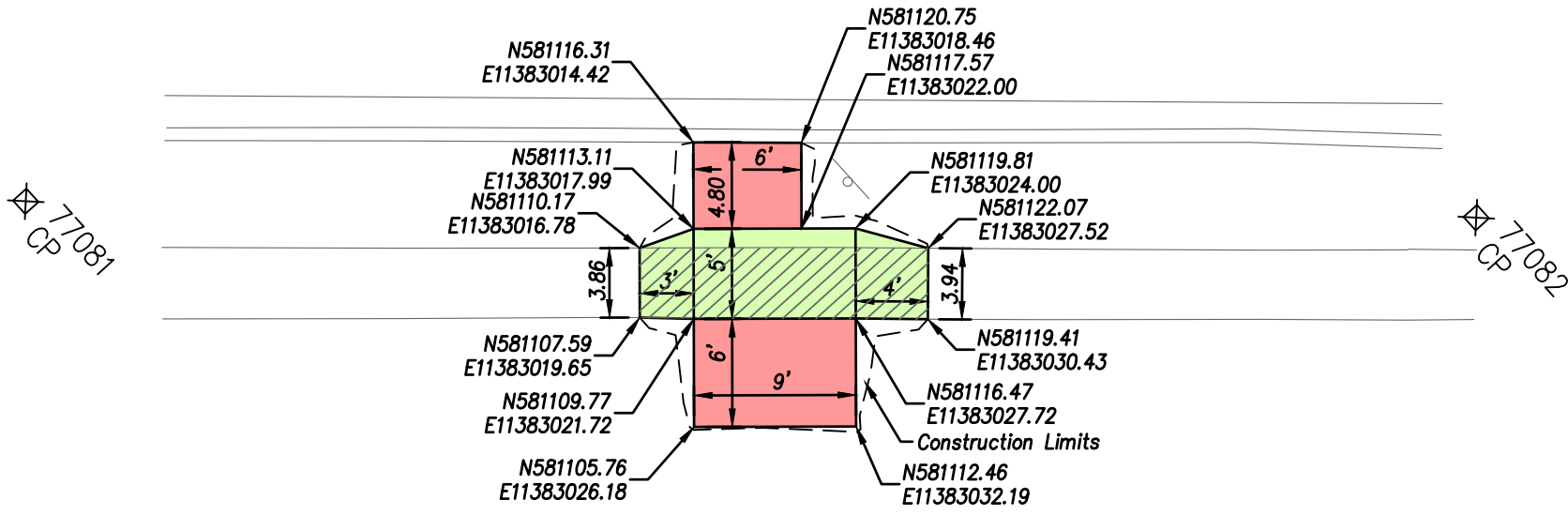
CFS ENGINEERS
cfse.com
2930 SW Woodside Dr, Topeka, KS 66614
o: 785-272-4706 f: 785-272-4736

NOTE: TMTA, Phase 9.4
CFS PROJECT # 15-5044
PROJECT MANAGER: KH

DATE: 1/2/20
SHEET OF 1

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SE BRANNER TRAFFICWAY

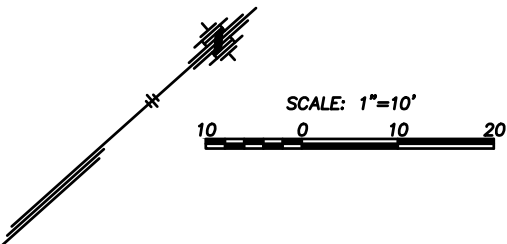
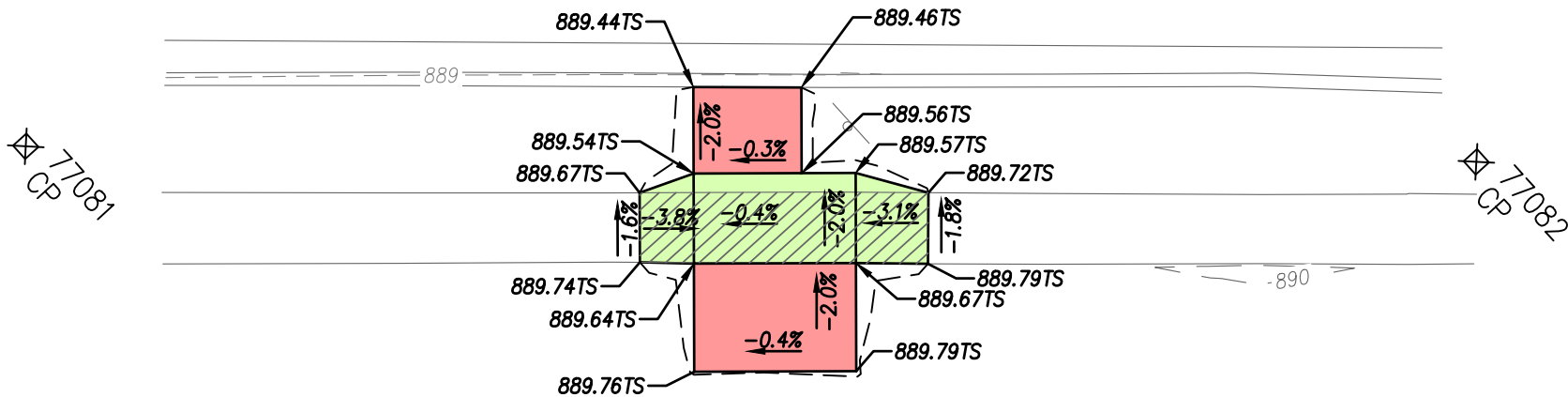


CONTROL:
GPS NETWORK OBSERVATION OF:
HORIZONTAL: NAD 83 KANSAS STATE PLANE NORTH ZONE 1501 (GRID)
VERTICAL: NAVD 88

CP 77081 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 581086.595 E: 1138992.013 EL: 889.55
1) TO EAST B/C BRANNER TFWY 3.5' W
2) TO E BRANNER ST 121.0' NNE
3) TOP E KEY FH 89.3' ESE

CP 77082 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 581145.806 E: 11383046.648 EL: 889.56
1) TO EAST B/C BRANNER TFWY 3.5' W
2) TO E BRANNER ST 40.4' NNE
3) TOP E KEY FH 117.1' SSE

SE BRANNER TRAFFICWAY



LEGEND

- Construct 5" Non-Reinforced Pad w/ 4" AB-3
- Conc. Sidewalk Removal
- Construct 4" Conc. Sidewalk w/ 4" AB-3

TP Top of Pavement
TS Top of Sidewalk

Note:
1. All grading side slopes shall be a 6:1 unless noted on plan.
2. Minimum thickness tolerance shall prevail.

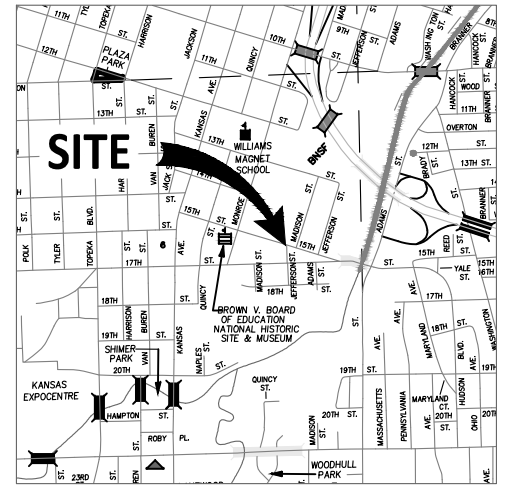
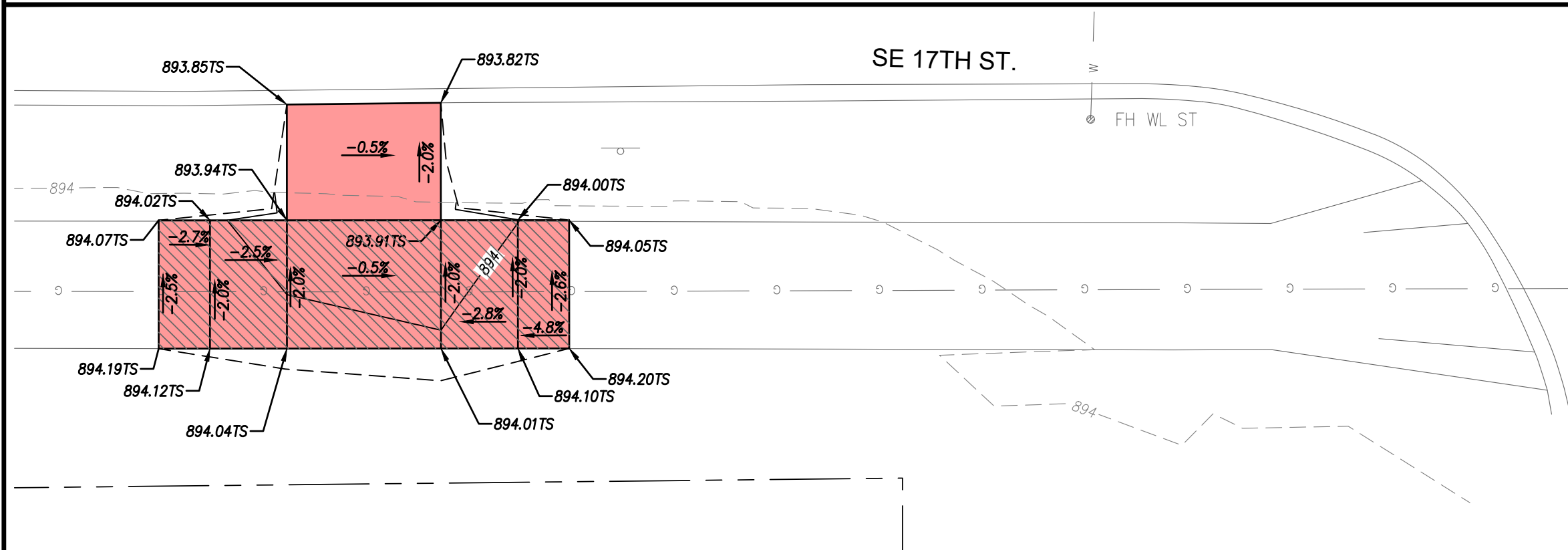
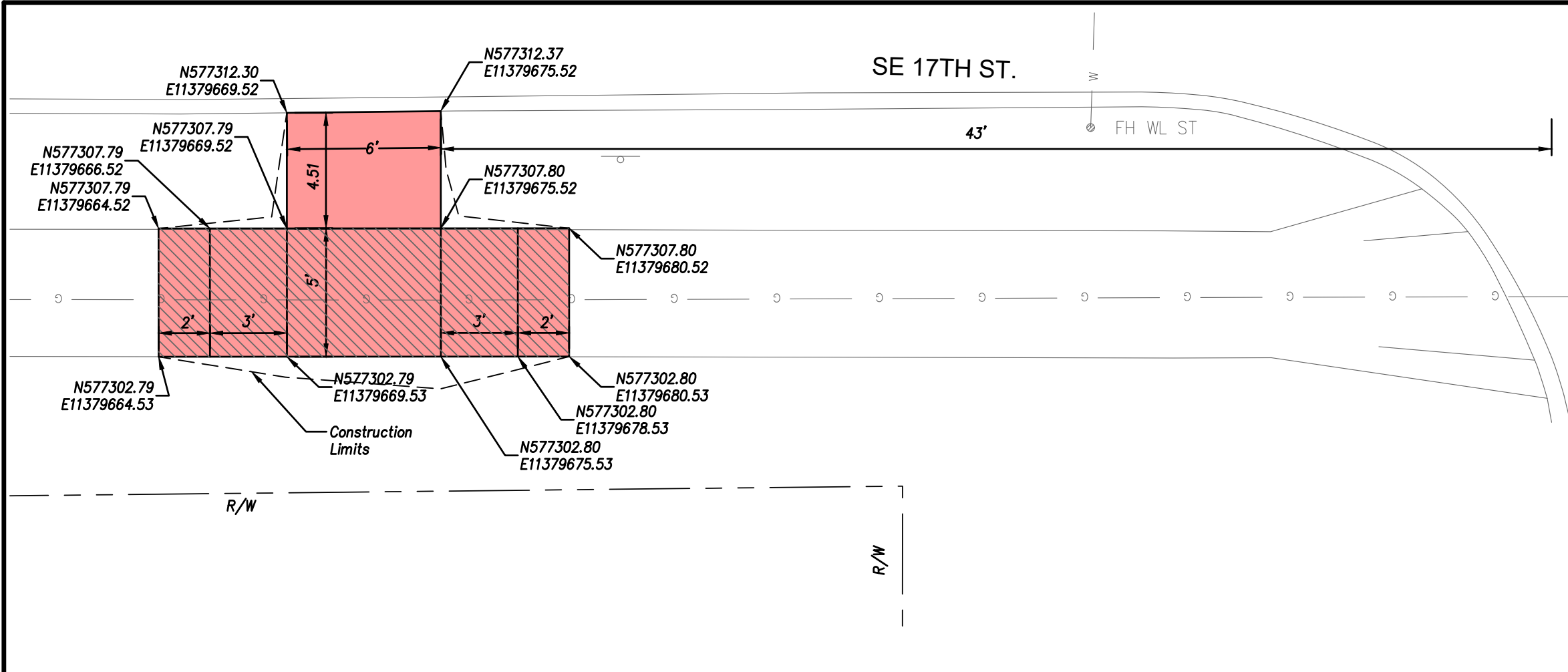
SE BRANNER TRFY. &
SE BRANNER ST. (IB)(MBE)
(Standing Pad & Bike Rack)

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NOTE: TMTA, Phase 7.7
CFS PROJECT # 15-5044
PROJECT MANAGER: KH

DATE: 11/20/19
SHEET 1 OF 1

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CONTROL:
GPS NETWORK OBSERVATION OF:
HORIZONTAL: NAD 83 KANSAS STATE PLANE NORTH ZONE 1501 (GRID)
VERTICAL: NAVD 88

CP 77061 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 577309.005 E: 11399629.046 EL: 894.01
1) TO SOUTH B/C 17TH ST 3.4' N
2) TO WEST B/C JEFFERSON EXT 92.0' E
3) TO TOP KEY FH 71.9' ENE

CP 77062 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 577308.864 E: 11379773.533 EL: 893.98
1) TO SOUTH B/C 17TH ST 3.4' N
2) TO EAST B/C JEFFERSON EXT 42.0' W
3) TO TOP KEY FH 72.6' WNW

SCALE: 1"=5'

5 0 5 10

LEGEND

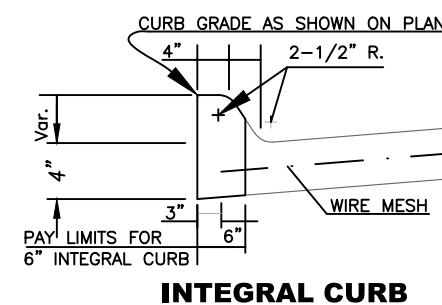
- Construct 5" Non-Reinforced Pad w/ 4" AB-3
- Conc. Sidewalk Removal

TP Top of Pavement
TS Top of Sidewalk

Note:
1. All grading side slopes shall be a 6:1 unless noted on plan.
2. Minimum thickness tolerance shall prevail.

SE 17th ST. &
SE JEFFERSON ST. (OB)(SW)
(Standing Pad)

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NOTE: TMTA, Phase 7.7	
CFS PROJECT # 15-5044	DATE: 11/20/19
PROJECT MANAGER: KH	SHEET 1 OF 1



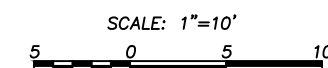
CONTROL 155044 PH 9.4
NAD 83 KRCS ZONE 11
NAVD 88

CP 94651 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 577296.1890 E: 11364832.2860 EL: 983.18

1) TO SOUTH B/C 17TH ST	3.5' N
2) TO @ BANK ENTR TO SOUTH	28.0' E
3) TO @ BASE GUY WIRE	3.5' W
4) TO NORTH EDGE WALK	9.4' S

CP 94652 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 577292.1590 E: 11365035.8370 EL: 981.13

1)	TO SOUTH B/C 17TH ST	1.0' N
2)	TO @ TSMH	16.5' E
3)	TO @ BASE UTIL POLE	35.8' W
4)	TO NORTHEAST COR BANK BLDG	41.0' SW



LEGEND

-  – Construct Reinforced Conc. Pad
-  – Construct 5" Non-Reinforced Pad w/ 4" AB-3
-  – Conc. Sidewalk Removal
-  – Construct 4" Conc. Sidewalk

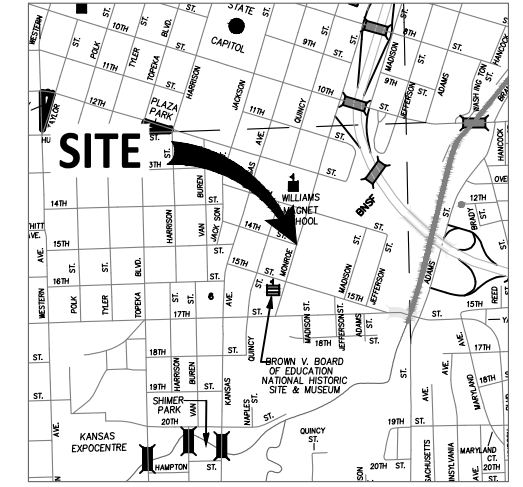
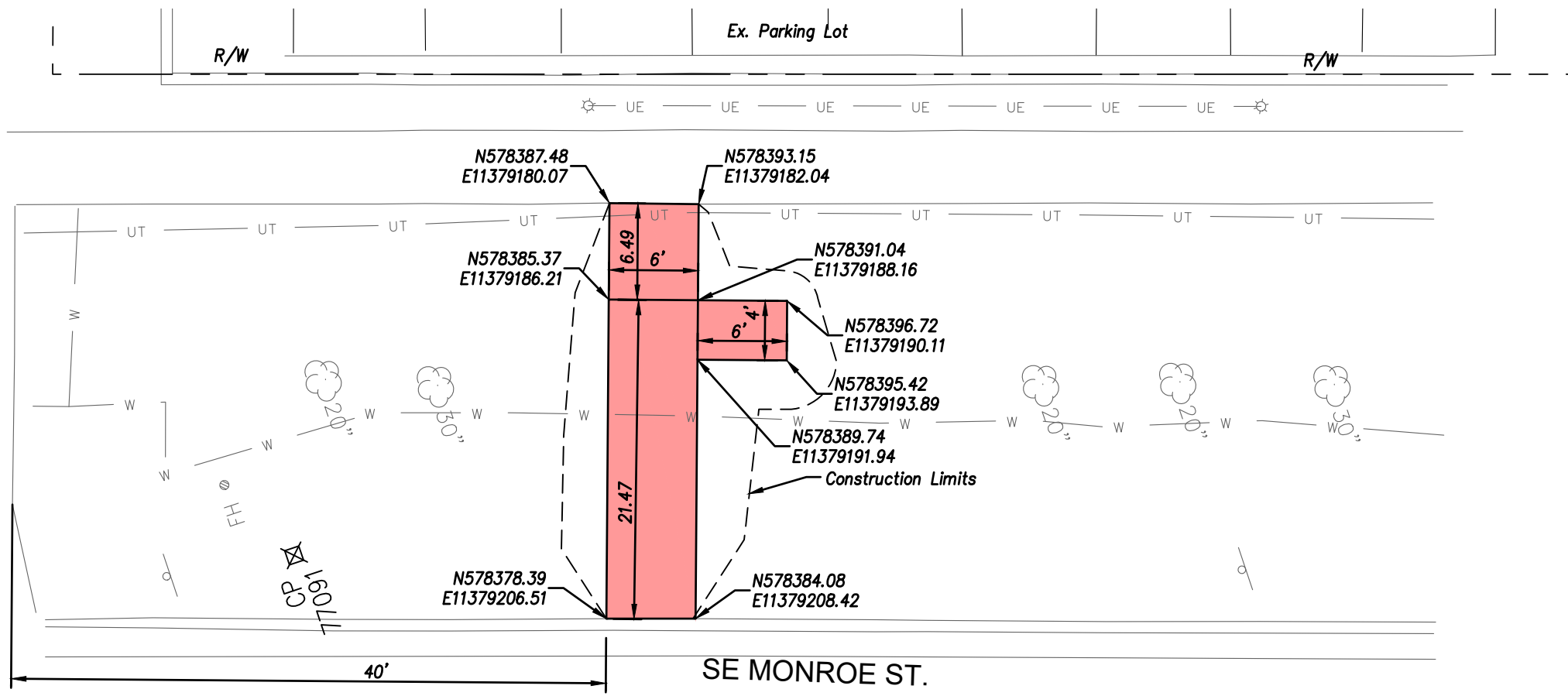
TP	Top of Pavement
TS	Top of Sidewalk
TC	Top of Curb
TW	Top of Wall

Note:
1. All grading side slopes shall be a 6:1 unless noted on plan.

**SW 17TH ST. &
SW GAGE BLVD. (IB)(SW)**
(Standing Pad)

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SE 14th ST.

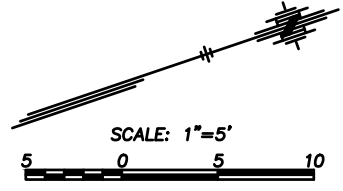
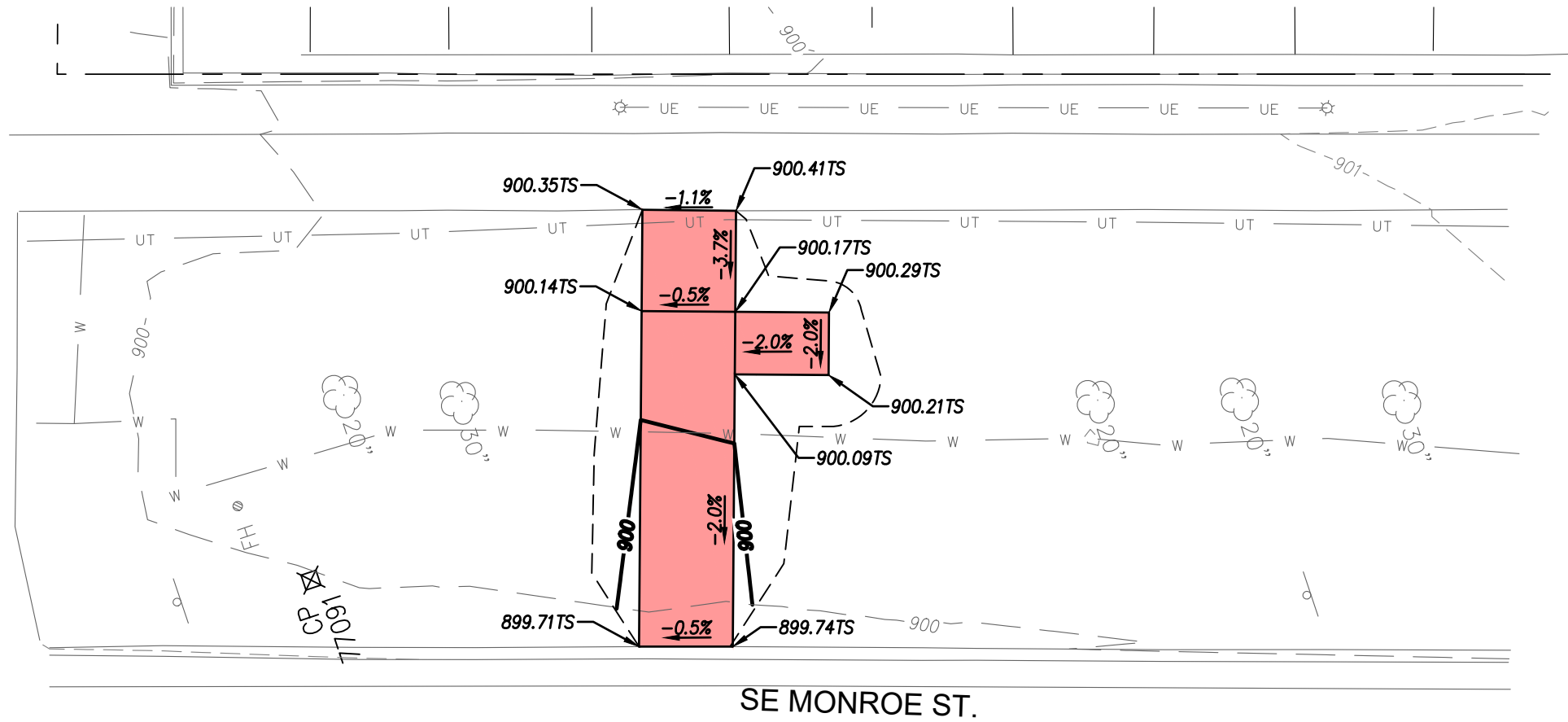


CONTROL:
GPS NETWORK OBSERVATION OF:
HORIZONTAL: NAD 83 KANSAS STATE PLANE NORTH ZONE 1501 (GRID)
VERTICAL: NAVD 88

CP 77091 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 578359.832 E: 11379195.797 EL: 899.94
1) TO WEST B/C MONROE 4.5' E
2) TO E 14TH ST 49.0' S
3) TOP E FH 6.7' SW

CP 77092 SET 1/2" REBAR W/CAP (CFS CONTROL)
N: 578462.999 E: 11379230.598 EL: 900.82
1) TO WEST B/C MONROE 4.5' E
2) TO E 14TH ST 125.0' S
3) E BASE 20" TREE 14.0' SW

SE 14th ST.



LEGEND

- Construct 5" Non-Reinforced Pad w/ 4" AB-3
- Conc. Sidewalk Removal

TP Top of Pavement
TS Top of Sidewalk

Note:
1. All grading side slopes shall be a 6:1 unless noted on plan.
2. Minimum thickness tolerance shall prevail.

SE MONROE ST. &
SE 14TH ST. (OB)(SW)
(Standing Pad & Bike Rack)

CFSENGINEERS

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NOTE: TMTA, Phase 7.7

CFS PROJECT # 15-5044

DATE: 11/20/19

PROJECT MANAGER: KH

SHEET 1 OF 1