

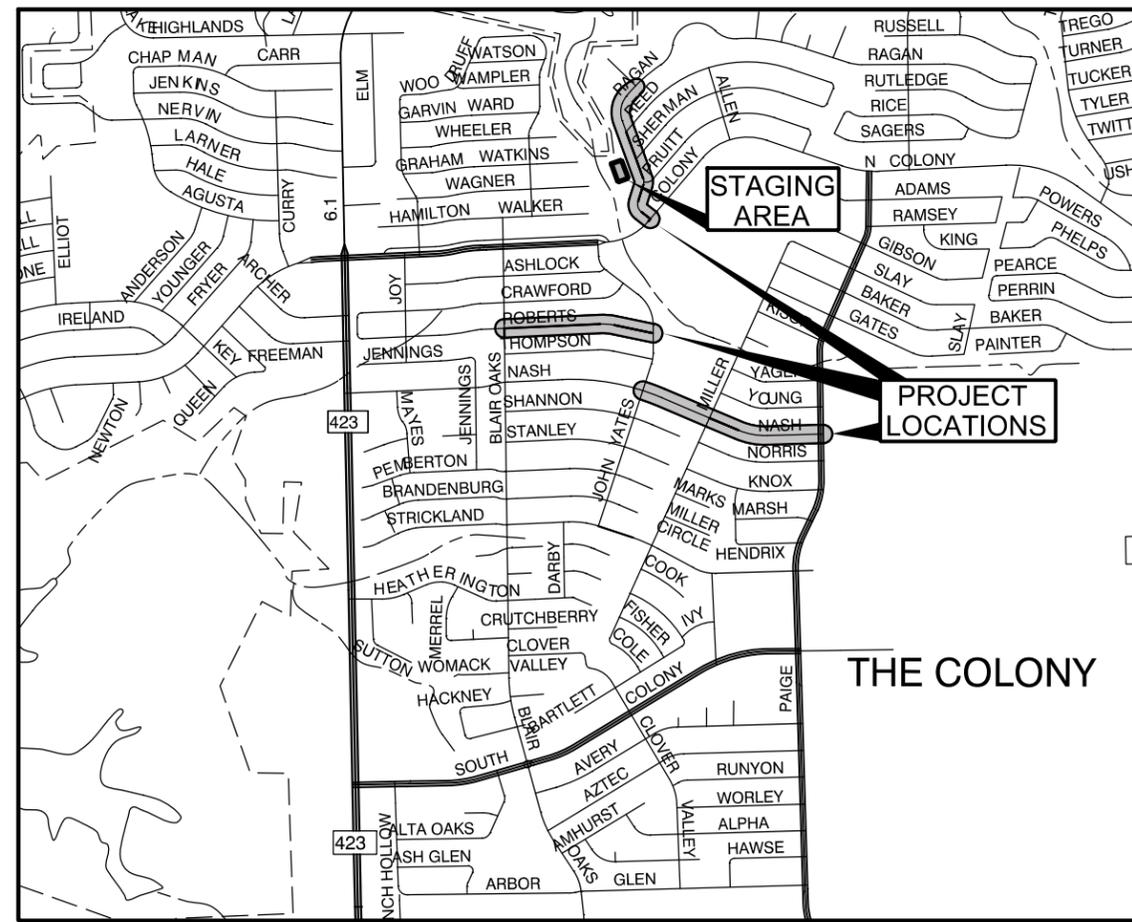
PHASE V STREET RECONSTRUCTION



MAYOR
JOSEPH McCOURRY

CITY MANAGER
TROY C. POWELL

CITY COUNCIL
RICHARD BOYER
BRIAN WADE
DAVID TERRE
PERRY SCHRAG
JOEL MARKS
KIRK MIKULEC



LOCATION MAP

PHASE V STREETS
NASH DRIVE
ROBERTS DRIVE
RAGAN ROAD

CITY'S RELEASE FOR CONSTRUCTION

All responsibility for the adequacy of these Engineering Plans remains with the Engineer-of-Record whose seal and dated signature appear on these plans and the developer. The City of The Colony must rely upon the adequacy of the work by the Engineer-of-Record in meeting any and all applicable local, state, and federal regulations, codes, and permits.

RELEASED: _____
Senior Engineer- The Colony, Texas

Date: _____

FEBRUARY 2015
AVO 30537



NAME: *J. Halff*
DATE: 2/20/15
TBPE FIRM #F-312

Civil Engineer:



CITY BID NO.
69-11-15-PHASE V

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NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



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PHASE V STREET RECONSTRUCTION	

CITY BID No. 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

GENERAL NOTES

1. All work shall be done in accordance with the City of The Colony standards and specifications which has adopted the North Central Texas Council of Governments (N.C.T.C.O.G.) "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" along with all of the latest amendments. Copies may be obtained from the "NORTH CENTRAL COUNCIL OF GOVERNMENTS", PO Box 5888, Arlington, Texas, 76005-5888, Phone (817) 640-3300. A copy of the contract documents, plans and specifications shall be available on-site at all times by the Contractor.
2. Prior to submission of the proposal, the Contractor shall have made a careful examination of the work site, the contract documents, and all matters that may affect the cost and time for the completion of the work involved.
3. The location and depth of all utilities shown on the plans are approximate and there may be other unknown existing utilities not shown on the plans. All existing utilities shall be field verified and protected by the Contractor prior to the start of construction. All locates must be sent to the City of The Colony at Locate@thecolonytx.gov or fax to (972) 624-2272. The contractor shall contact the following utility companies 72 hours prior to doing any work in the area:

a) Texas One Call	PH (800) 245-4545
b) City of The Colony Water Department	PH (972) 624-3113
c) Oncor Electric	PH (940) 497-7510
d) Atmos Energy	PH (972) 881-4161
e) AT&T	PH (972) 569-3010
f) Time Warner Cable	PH (214) 320-5435
g) CoServ Electric	PH (940) 321-7800
h) CoServ Gas	PH (940) 321-7800
i) DIGTESS	PH (800) 344-8377
j) Grande Communications	PH (940) 270-9600
4. It shall be the responsibility of the Contractor to perform the following at no additional compensation:
 - a) Prevent any property damage to property owner's poles, fences, shrubs, mailboxes, etc.
 - b) Provide access to all drives during construction.
 - c) Protect all underground and overhead utilities and repair any damages. Also see General Note No. 3.
 - d) Notify all Utility Companies and verify location of all utilities prior to the start of construction.
 - e) Cooperate with the Utility Companies where utilities are required or specified to be relocated.
 - f) Work in close proximity to and protect existing Utility Mains, traffic lights and poles.
 - g) Keep each street open to one-way traffic at all times.
5. All communication between the City and the Contractor shall be through the City Inspector only.
6. In the preparation of the plans and specifications, the Engineer has endeavored to indicate the location of existing underground utilities. It is not guaranteed that all lines or structures have been shown on the plans.
7. The Contractor shall install the Capital Improvement Project Signs as specified in Special Provision 4-21 of the project manual prior to any construction.
8. The successful Contractor shall submit a sequence of work schedule to the City of The Colony prior to commencing work and provide monthly updates until the project is completed.
9. The Contractor shall provide proper barricades and maintain traffic flow as per MUTCD at all times.
10. Contractor is responsible for all cost involved in disposing of excess materials. The location for the disposal of construction material shall be approved by the City of The Colony Engineering division prior to the start of construction.
11. All phases of construction must be coordinated with the Engineer. Field adjustments may be necessary and will be carried out as directed by the Engineer, at no extra pay.
12. The Contractor shall verify, locate, and protect existing water, sanitary sewer, storm sewer, gas, electric and telephone mains and services and restore service in case of any damage, at no extra pay.
13. The Contractor shall contact the City of The Colony Engineering Department prior to any sign removal. Sign removal and reinstallation/relocation shall be in good condition equal to or better than existing condition, and as per the Engineer's specifications, with the cost incidental to the Project Bid Items.
14. All fences, signs, and property corner monuments removed for, or damaged during construction shall be replaced or repaired to as good a condition or with a better material than the existing as per the Engineer's specifications. Extra payment shall not be made for this work.
15. The Contractor shall relocate existing mailboxes in conflict with the proposed improvements and as specified on the plans, in good condition equal to or better than existing condition, complete in place, and with the cost incidental to the Project Bid Items. The mailboxes shall be accessible at all times for mail delivery.
16. The Contractor is responsible for all testing, with the cost incidental to the Project.
17. The Contractor shall be responsible for taking all precautions to protect existing trees outside the scope of this Project.
18. The Contractor shall be responsible for repairing any damage caused by the Contractor outside of the designated work area with equal or better quality material at the Contractor's expense.

19. The Contractor shall locate, verify working conditions and protect all existing sprinkler systems lines and heads (if any). Remove, adjust and reinstall in good condition equal to or better than existing condition; replace, if in direct conflict, with the same or better quality material and appurtenances, all at no extra pay.
20. All existing grades shown on the plans are approximate and shown based on the best information available.
21. All backfill for ditch lines shall be compacted in accordance with Special Provision 4-22 Mechanical Tamping in the Project Manual.
22. All ditch lines shall be filled, as per specifications, by the end of each day at no extra pay.
23. All stations are along the centerline of the proposed pipes as shown on the plans.
24. All pipe shall be kept free of trash and dirt at all time. At the end of each day, the pipe shall be temporarily connected/sealed.
25. All trench widths for water, sanitary sewer and storm drain pipe installation shall be kept to a minimum where possible, and as per the Engineer's specifications. If working in paved street and driveway areas open to traffic the Contractor shall provide for a temporary 3' hot mix asphalt surface material pavement Type 'B' of the Texas Department of Highways and Public Transportation, 2004 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, to be placed over the ditch area as per the Engineer's specifications, until the final permanent improvements are made; at no extra pay. Driveways and driveway entrances shall also be repaired with 3' hot mix asphalt at no extra pay.
26. The Contractor shall keep the existing fire hydrants in service at all times.
27. The Contractor shall maintain the existing water mains in service during all phases of construction at no extra pay. Leaks caused by the Contractor shall be repaired immediately at the Contractor's expense. Leaks along the existing water main close to the working area, caused by vibration, etc. (during working hours) shall be repaired by the Contractor with the City only providing the required parts. The City will repair all leaks if the Contractor is not on the job-site (primarily after working hours); if the leak is directly caused by the Contractor and not repaired, all charges incurred shall be billed to the Contractor.
28. All cutting and plugging of the existing water main where specified on the plans, shall include all labor, fittings and appurtenances required to perform this work, with the cost incidental to the project. If the Contractor is unable to cut and plug the existing water mains due to the water supply having not been shut down adequately to perform this work within two (2) hours, and as determined by the City Inspector, the City of The Colony Water Utilities Division will plug the water main with the Contractor supplying the required parts, with a field note on the As-built plans stating so.
29. The Contractor shall maintain the existing sanitary sewer mains and services in operation when installing the proposed sanitary sewer main. This shall include any temporary connections, if required. In areas of conflict, the cost of any sanitary sewer pumping as required shall be subsidiary to the total cost of the project.
30. The Contractor shall coordinate with the City Inspector to have the proposed sanitary sewer and/or storm drain line televised with a representative present, prior to the final acceptance of this Project. The televising shall be performed by the Contractor at Contractor's expense. Cost for televising proposed sanitary sewer and/or storm drain lines shall be subsidiary to the various bid items for sanitary sewer and/or storm drain pipe. All defects revealed shall be repaired/replaced by the Contractor prior to the final acceptance.
31. Construction dewatering, if any, is incidental to the Project Bid Items.
32. The Contractor shall inform the City of The Colony Public Works Department through the City Inspector, in writing, a minimum of two weeks in advance of any street closing.
33. "Sheeting, Shoring and Bracing": The Contractor shall abide by all applicable federal, state and local laws governing excavation. Trench side slopes shall meet Occupational Safety and Health Administration (OSHA) Standards that are in effect at the time of Bid Opening. Sheeting, Shoring and bracing shall be provided when side slopes standards are not met. A pull box, meeting OSHA Standards, may be acceptable, unless negated by groundwater control measures. The apparent low bidder shall submit detailed plans and specifications for trench safety system that meet OSHA Standards that are in effect at the time of Bid Opening. These plans shall be sealed by an Engineer registered by the State of Texas and submitted to the City prior to the formal execution of the Contract.
34. Contractor shall conform activities to the SWPPP as specified, including installing, maintaining, and removing pollution controls, conducting and documenting inspections of pollution controls, sprinkling for dust control, maintaining spill response equipment on-site, and "good housekeeping". Pollution controls include silt fences, stabilized construction entrance, establishing grass, sprinkling for dust control.
35. The Contractor shall maintain the existing water mains and services in operation when installing the proposed water main. This shall include any temporary connections, if required.
36. All shrubs and landscaping disturbed during construction shall be replaced with the cost subsidiary to the total cost of the project.
37. The contractor shall field verify depth and location of all existing city utilities prior to installing the new main.
38. During construction, all drainage ditches, channels, etc. shall be kept drained, insofar as practicable, and the work shall be conducted in a neat workmanlike manner.

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Leigh A. Hollis
NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312



GENERAL NOTES
(SHEET 1 OF 2)

PHASE V STREET
RECONSTRUCTION

SHEET
3

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

EARTH WORK GENERAL NOTES

- All earth work shall be conducted in accordance with "Geotechnical Engineering Study Phase IV Street Reconstruction" prepared by CMJ engineering January, 2011.
- All concrete, trees, stumps, brush, abandoned structures, roots, vegetation, rubbish and any other undesirable matter should be removed and disposed of properly. All vegetation should be removed and the exposed surface should be scarified to an additional depth of at least 6 inches providing a loose surface with no features that will tend to prevent uniform compaction.
- All areas to be filled should be disc'd or bladed until uniform and free from large clods. Sandy clay and clay soils should be brought to a moisture content between optimum and 4 percentage points above optimum moisture value, and compacted to between 95 and 100 percent of optimum density in accordance with ASTM D 698. Clayey sand and sand should be brought to a moisture content within 2 percentage points of optimum and compacted to between 95 and 100 percent of optimum density in accordance with ASTM D 698.
- General site fill shall consist of on-site material or imported material having a liquid limit less than 60 approved by the Engineer. There should be no roots, vegetation or any other undesirable matter in the soil and no rocks larger than 4 inches in diameter.
- Fill material shall be placed in level, uniform layers, which, when compacted, shall have the moisture content and density as described above. Each layer shall be thoroughly mixed during the spreading to provide uniformity of the layer. The fill thickness should not exceed 8-inch loose lifts.
- Field density tests shall be performed at a minimum rate of one test per 2,500 square feet per lift in all lifts. Density tests shall be taken in each layer of the compacted material below the disturbed surface. If the materials fail to meet the density specified, the course shall be reworked as necessary to obtain the specified compaction.

TRENCH BEDDING AND BACKFILL GENERAL NOTES

- The subgrade and bedding for storm sewer, wastewater, and water lines shall conform to the City of the Colony details.
- Underground utility conduits shall not be placed in the presence of groundwater. All water shall be removed prior to utility placement to provide a dry, firm bed, and shall be maintained in a dewatered condition until all concrete and mortar is set and the excavation backfilled.
- The Contractor shall protect the foundation bearing surface of all foundation excavations left open for more than one day with a lean concrete mud mat or a layer of crushed aggregate.
- Backfill for utility lines shall consist of site-excavated soil compacted to the moisture and density requirements described in the above Earth Work General Notes.
- Backfill in-place density testing shall be conducted in accordance with ASTM D 698. A minimum of one density test will be made for each 100 linear feet of every lift of backfill per Special Provision 4-22 Mechanical Tamping in the Project Manual. When backfill tested fails to meet the required density, trench backfill in the vicinity of the test, i.e. for a minimum of 50 feet in both directions from the test location, shall be removed and replaced with compaction. Thereafter, three tests shall be performed on the material removed and replaced to determine if it is in accordance with the project requirements. In addition, at least one (1) density test shall also be obtained beneath each inlet, junction box, service line, and manhole installed.
- If granular material is used for embedment in utility trenches, the Contractor shall place a clay cut-off wall at the location of the service to the Public line, at the location where the utility enters the structure, and at other connections.

PAVING SUBGRADE GENERAL NOTES

- All topsoil, existing pavement and structures, vegetation, and any unsuitable materials should be removed.
- The pavement subgrade should be proofrolled with a fully loaded tandem axle dump truck or similar pneumatic-tire equipment to locate areas of loose subgrade. In areas to be cut, the proofroll should be performed after the final grade is established. In areas to be filled, the proofroll should be performed prior to placement of engineered fill and after the pavement subgrade is established. Areas of loose or soft subgrade encountered in the proofroll shall be removed and replaced with engineered fill or moisture conditioned and compacted in place.
- The subgrade shall be lime stabilized using a minimum of 8 percent lime by dry soil weight (36 lbs/SY) to a depth of 6 inches. Lime stabilization shall be conducted in accordance with the City of The Colony standards.

PAVING GENERAL NOTES

- Portland cement concrete paving shall be performed in accordance with The City of The Colony Standards for residential, commercial, and industrial streets and the associated details.
- All paving shall have a minimum 28-day compressive strength of 4,000 pounds per square inch.
- Paving reinforcement shall consist of #4 bars at 24-inch spacing each way.

TRAFFIC CONTROL GENERAL NOTES

- The traffic control details contained in this plan set is an established minimum. The Contractor shall provide the necessary traffic control to complete the proposed work.
- Prior to closing any lane the Contractor shall contact The City of The Colony Engineering Department and submit their traffic control plan.
- During utility construction the Contractor shall only close the lanes while construction is in progress. All lanes shall be returned to service at the end of each work day.

EROSION CONTROL GENERAL NOTES

- Approximately 6 acres will be disturbed with this construction.
- No construction shall commence until the Contractor has implemented a joint stormwater pollution control plan. The Contractor will submit a Notice of Intent and Notice of Termination. The City will be listed as the Secondary Operator in the SWPPP.
- All contractors and subcontractors shall be identified in the plan.
- A copy of the Notice of Intent (NOI) and a copy of the stormwater pollution prevention plan must be kept and maintained on the construction site.
- Stabilization measures shall be provided and maintained by a qualified contractor experienced in providing said facilities and services.
- Stabilization measures shall be initiated on disturbed areas as soon as practical, but no more than 14 days after construction activity has ceased, unless activities are to resume within 21 days.

- The Contractor shall inspect stabilization measures at a minimum of once every 7 days, and within 24 hours after any rainstorm event greater than 0.5 inches. Repairs and inadequacies revealed by the inspection shall be implemented within 7 calendar days following inspection.
- An inspection report summarizing all inspection activities related to the stormwater pollution prevention plan shall be retained and made a part of the plan.
- The Contractor shall amend the stormwater pollution prevention plan whenever there is a change of design, construction, operation, or maintenance of the plan, or when the initial plan becomes ineffective.
- During drainage system construction, all culverts and inlets shall be protected from silt and soil deposits by use of inlet protection.
- It shall be the Contractor's responsibility to use whatever methods and/or means are required to control and limit the amounts of silt and sediment that are allowed to leave the construction site including limiting the amount of soil tracked offsite by construction vehicles. The Contractor shall protect public streets, walks, alleys, streams, storm drainage systems, and inlets from soil deposits.
- The Contractor shall adopt appropriate construction site management practices to prevent the discharge of oils, grease, paints, gasoline, and other pollutants to stormwater. Appropriate practices include:
 - Designation of areas for equipment maintenance and repair.
 - Collection of wastes on a regular basis.
 - Convenient location of waste receptacles
 - Designation and control of equipment wash down areas.
- It is anticipated that the following non-stormwater discharges will be associated with the construction work at the site. Each of the following discharges is authorized by the NPDES Construction General Permit:
 - Fire hydrant flushing
 - Water used for dust control
 - Potable water sources
 - Uncontaminated groundwater
 - Construction water
- The Contractor shall clean all storm drain lines, box culverts and channels after completion of construction. Said facilities shall be maintained until stabilization of disturbed areas is complete.
- The plan and details shown are considered to be the minimum required. The contractor shall provide all appropriate measures to conform to TCEQ requirements until the project is complete and accepted by the City of The Colony.

LEGEND

	PROPOSED BACK OF CURB		EXISTING CURB & GUTTER
	PROPOSED CONCRETE PAVEMENT		EXISTING CONCRETE PAVEMENT
	PROPOSED SIDEWALK		EXISTING STORM DRAIN
	PROPOSED TYPE I CURB INLET		EXISTING CURB INLET
	PROPOSED STANDARD CURB INLET		EXISTING WATER LINE
	PROPOSED STORM DRAIN MANHOLE		EXISTING WATER METER
	PROPOSED WATER LINE & GATE VALVE		EXISTING FIRE HYDRANT AND GATE VALVE
	PROPOSED FIRE HYDRANT ASSEMBLY		EXISTING SANITARY SEWER LINE
	PROPOSED WATER SERVICE & METER BOX		EXISTING SANITARY SEWER MANHOLE
	PROPOSED SANITARY SEWER LINE		EXISTING UNDERGROUND TELEPHONE
	PROPOSED SANITARY SEWER MANHOLE		EXISTING TELEPHONE MANHOLE
	PROPOSED STREET LIGHT		EXISTING CABLE BOX
	PROPOSED STREET LIGHT CONDUIT		EXISTING POWER POLE & GUY WIRE
	PROPOSED CONTOUR		EXISTING OVERHEAD ELECTRIC
	PROPOSED DETECTABLE WARNING/CURB RAMP		EXISTING GAS LINE
			EXISTING METER
			EXISTING FENCE
			EXISTING STREET SIGN
			EXISTING PROPERTY LINE
			EXISTING EASEMENT LINE
			EXISTING CONTOUR
			EXISTING TREE

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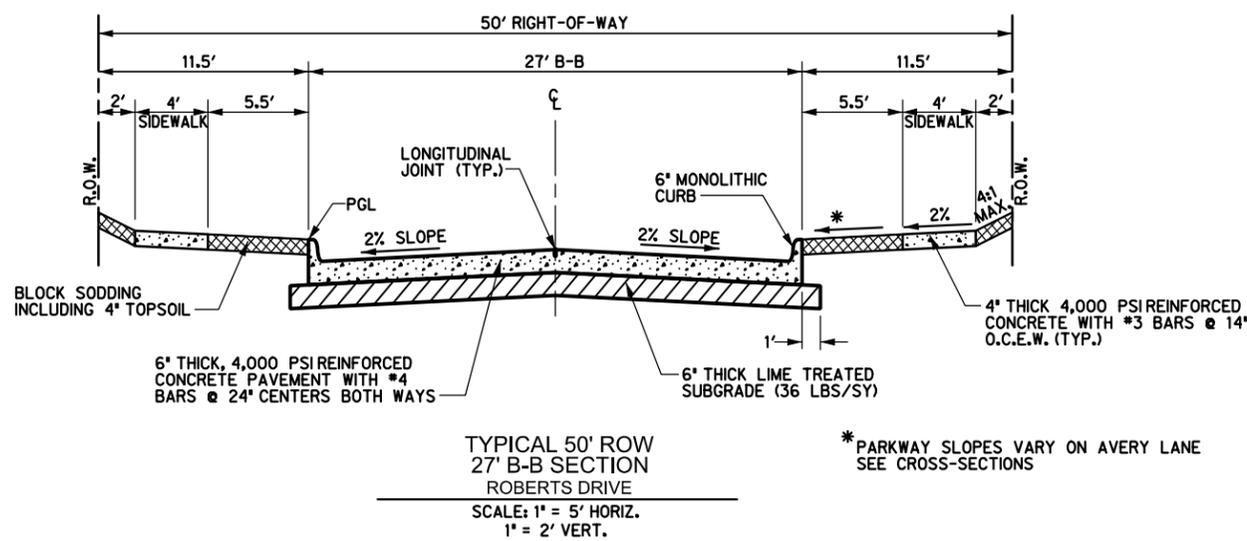
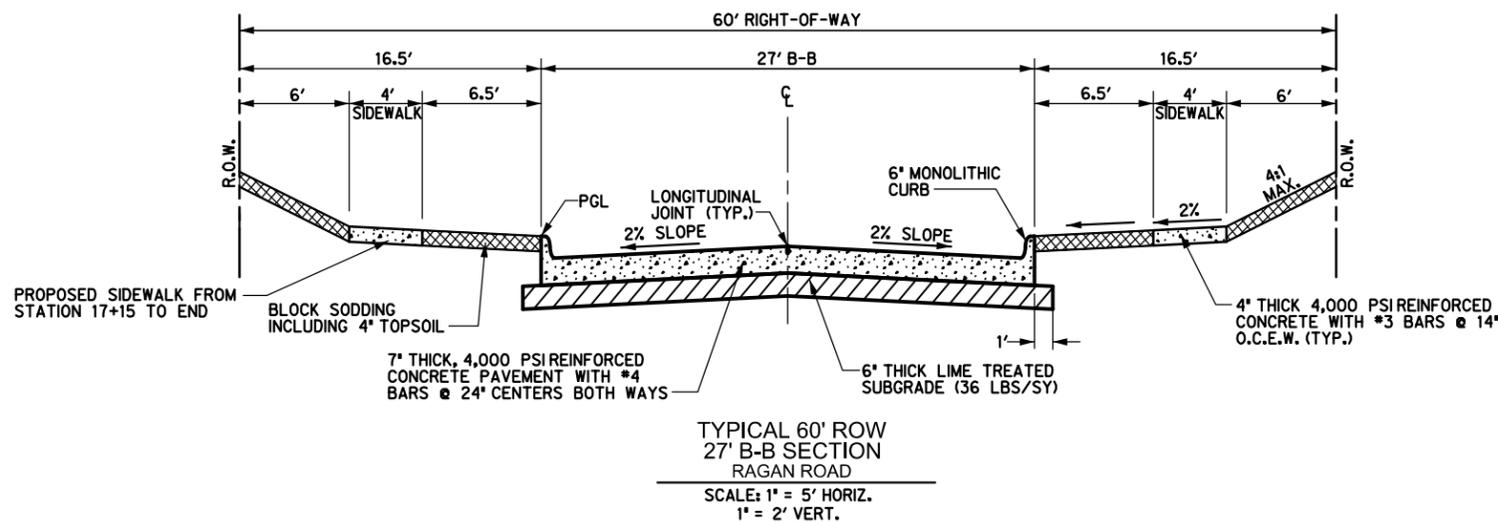
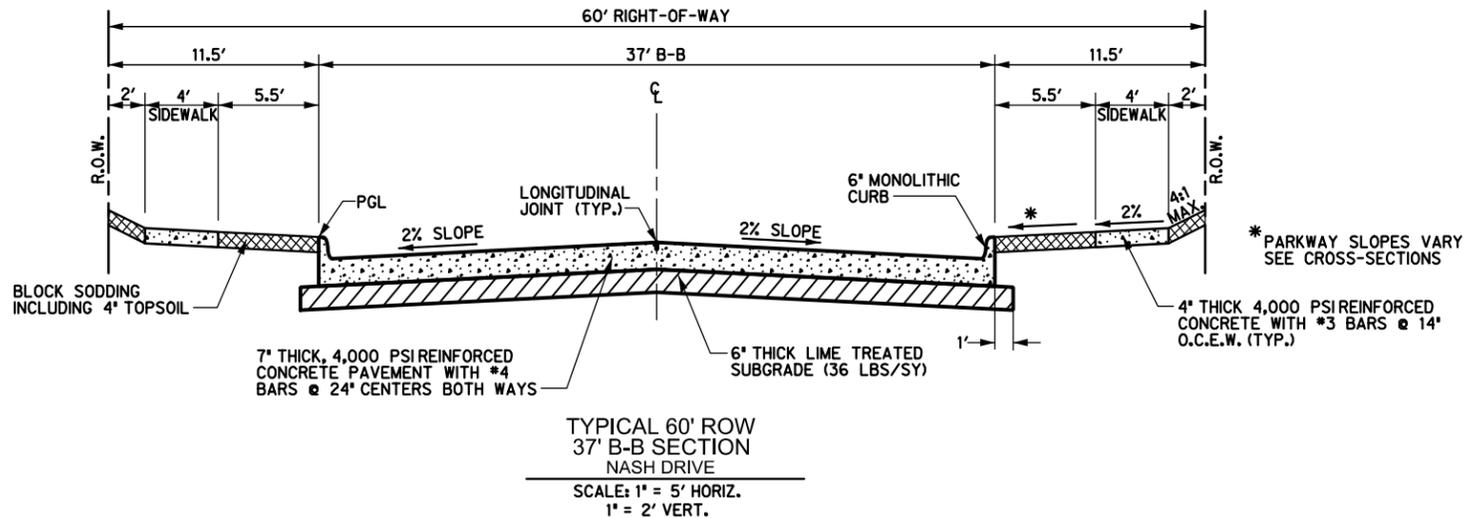
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GENERAL NOTES & LEGEND
(SHEET 2 OF 2)
PHASE V STREET
RECONSTRUCTION

SHEET
4
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



* PARKWAY SLOPES VARY
SEE CROSS-SECTIONS

* PARKWAY SLOPES VARY ON AVERY LANE
SEE CROSS-SECTIONS

- NOTES:
1. TRANSVERSE JOINTS SHALL BE PLACED AT MAXIMUM 15 FOOT INCREMENTS REGARDLESS OF PAVEMENT THICKNESS
 2. IN THE CASE OF CONFLICT WITH CITY STANDARD DETAILS, INFORMATION PROVIDED ON THE TYPICAL SECTIONS WILL CONTROL

2/17/2015 2:29:52 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869TYP01.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869TYP01.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



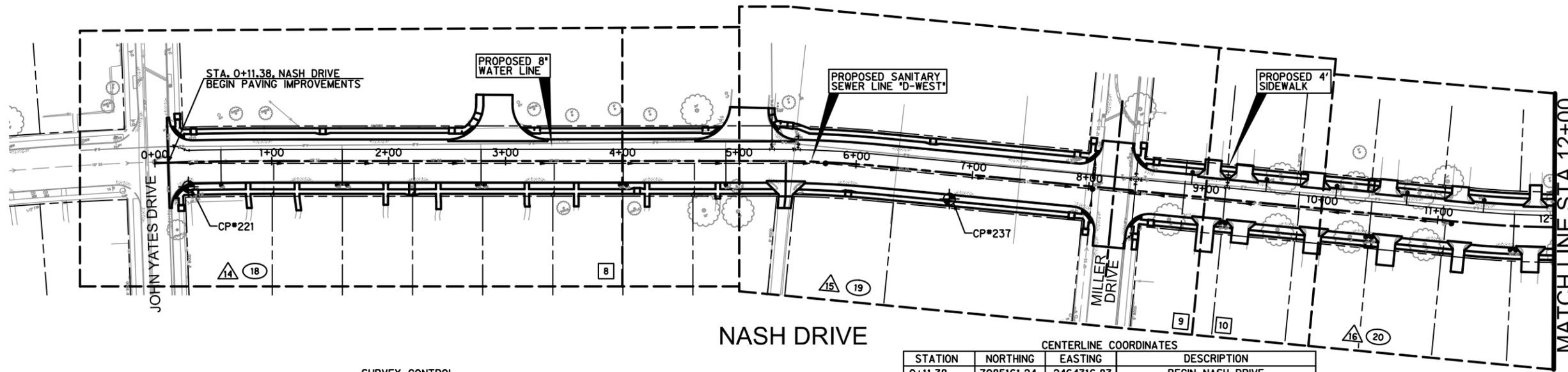
NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

TYPICAL PAVING SECTIONS
PHASE V STREET RECONSTRUCTION

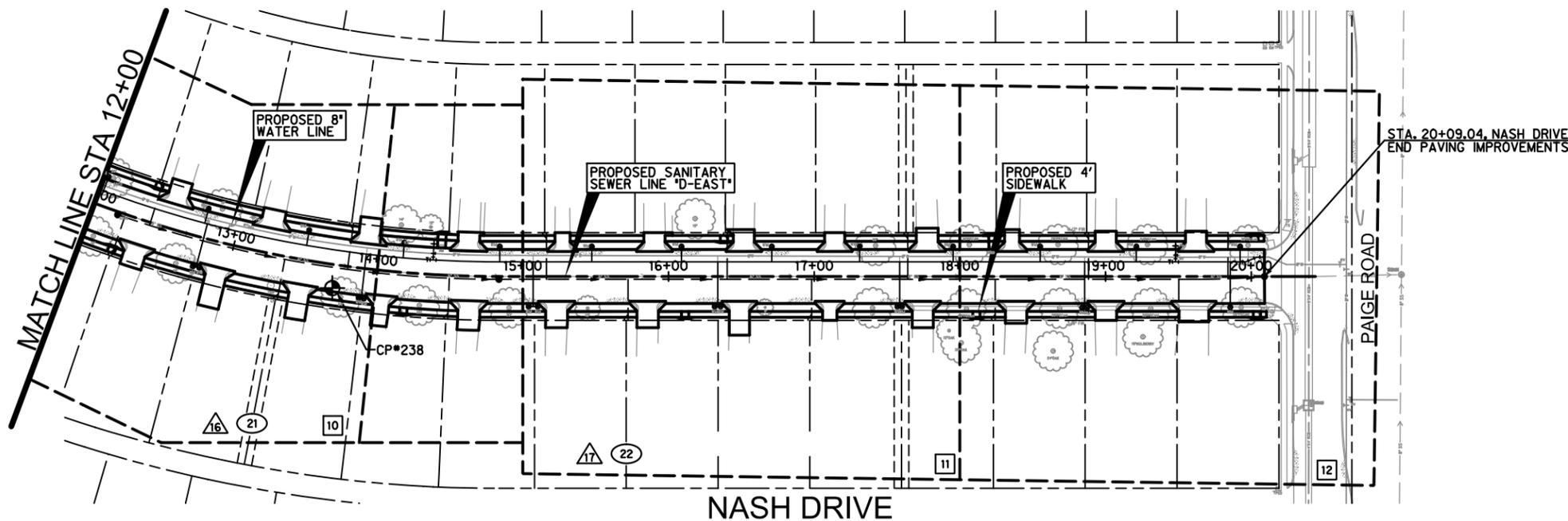
SHEET
5
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



SURVEY CONTROL				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
221	7085136.09	2464326.37	583.76	1/2" SIR RED 'TP' CAP
237	7084910.19	2464937.10	585.44	1/2" SIR RED 'TP' CAP
238	7084660.06	2465581.51	585.27	SET 'X' TP

CENTERLINE COORDINATES			
STATION	NORTHING	EASTING	DESCRIPTION
0+11.38	7085161.24	2464316.83	BEGIN NASH DRIVE
0+93.42	7085135.31	2464394.66	PT
5+26.08	7084991.84	2464802.85	PC
6+21.85	7084955.82	2464891.53	PT
8+74.79	7084849.51	2465121.05	PI
11+27.73	7084743.21	2465350.57	PC
14+83.63	7084669.67	2465695.76	PT
20+09.04	7084677.29	2466242.61	END NASH DRIVE



LEGEND	
	SHEET LIMITS
	99+00 CENTERLINE PAVING IMPROVEMENTS
	7 PAVING SHEET No.
	22 DRAINAGE SHEET No.
	38 WATER SHEET No.
	63 SANITARY SEWER SHEET No.
	CONTROL POINT No.

2/17/2015 2:29:55 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869PROJ03.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869PROJ03.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

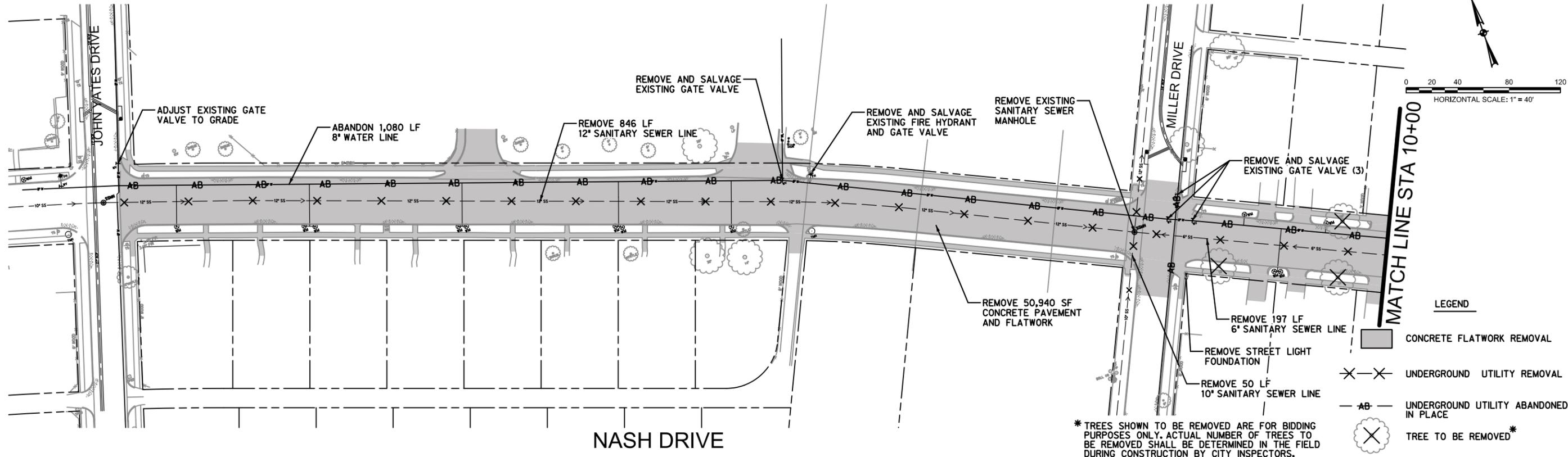


Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE PROJECT LAYOUT
 PHASE V STREET RECONSTRUCTION

SHEET 6
 CITY BID No. 69-11-15-PHASE V

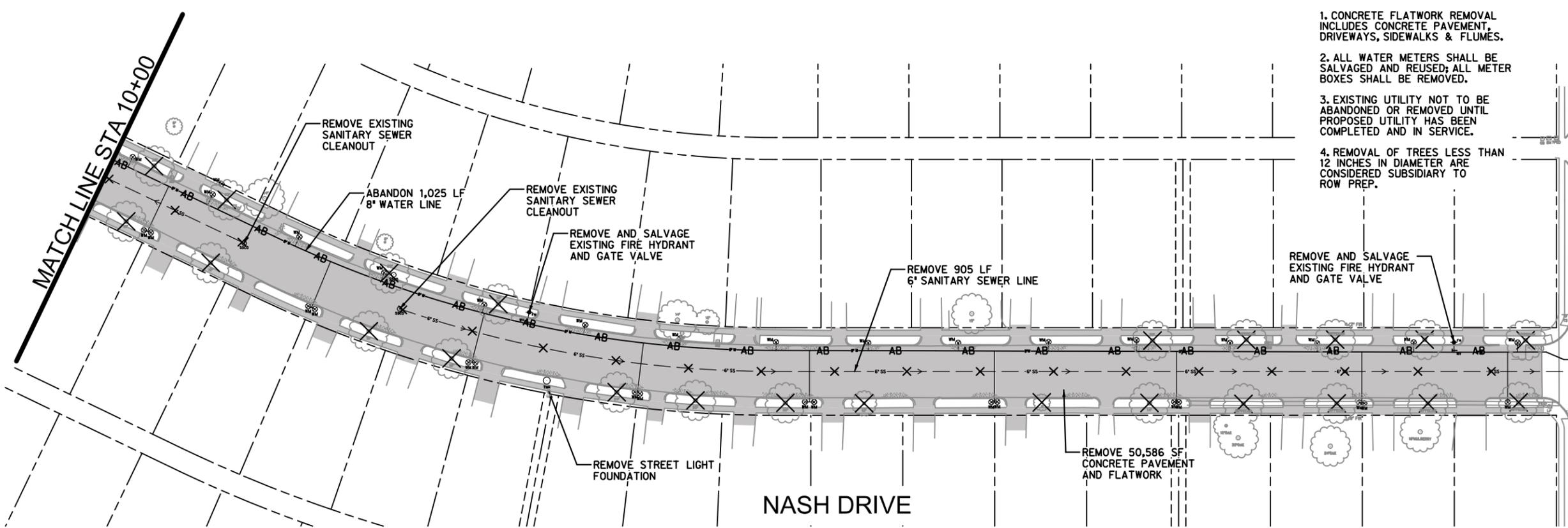
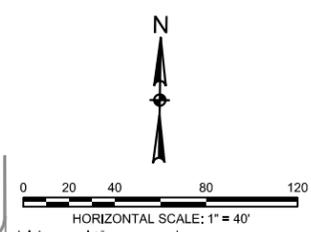


- LEGEND**
- CONCRETE FLATWORK REMOVAL
 - UNDERGROUND UTILITY REMOVAL
 - UNDERGROUND UTILITY ABANDONED IN PLACE
 - X TREE TO BE REMOVED*

* TREES SHOWN TO BE REMOVED ARE FOR BIDDING PURPOSES ONLY. ACTUAL NUMBER OF TREES TO BE REMOVED SHALL BE DETERMINED IN THE FIELD DURING CONSTRUCTION BY CITY INSPECTORS.

GENERAL NOTES:

1. CONCRETE FLATWORK REMOVAL INCLUDES CONCRETE PAVEMENT, DRIVEWAYS, SIDEWALKS & FLUMES.
2. ALL WATER METERS SHALL BE SALVAGED AND REUSED; ALL METER BOXES SHALL BE REMOVED.
3. EXISTING UTILITY NOT TO BE ABANDONED OR REMOVED UNTIL PROPOSED UTILITY HAS BEEN COMPLETED AND IN SERVICE.
4. REMOVAL OF TREES LESS THAN 12 INCHES IN DIAMETER ARE CONSIDERED SUBSIDIARY TO ROW PREP.



MATCH LINE STA 10+00

PAIGE ROAD

2/17/2015 2:29:59 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869REMV03.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869REMV03.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



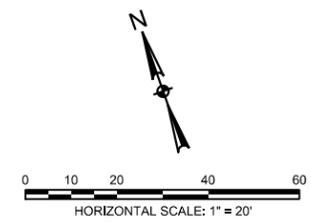
Leigh A. Hollis
NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312



NASH DRIVE
REMOVAL PLAN
PHASE V STREET
RECONSTRUCTION

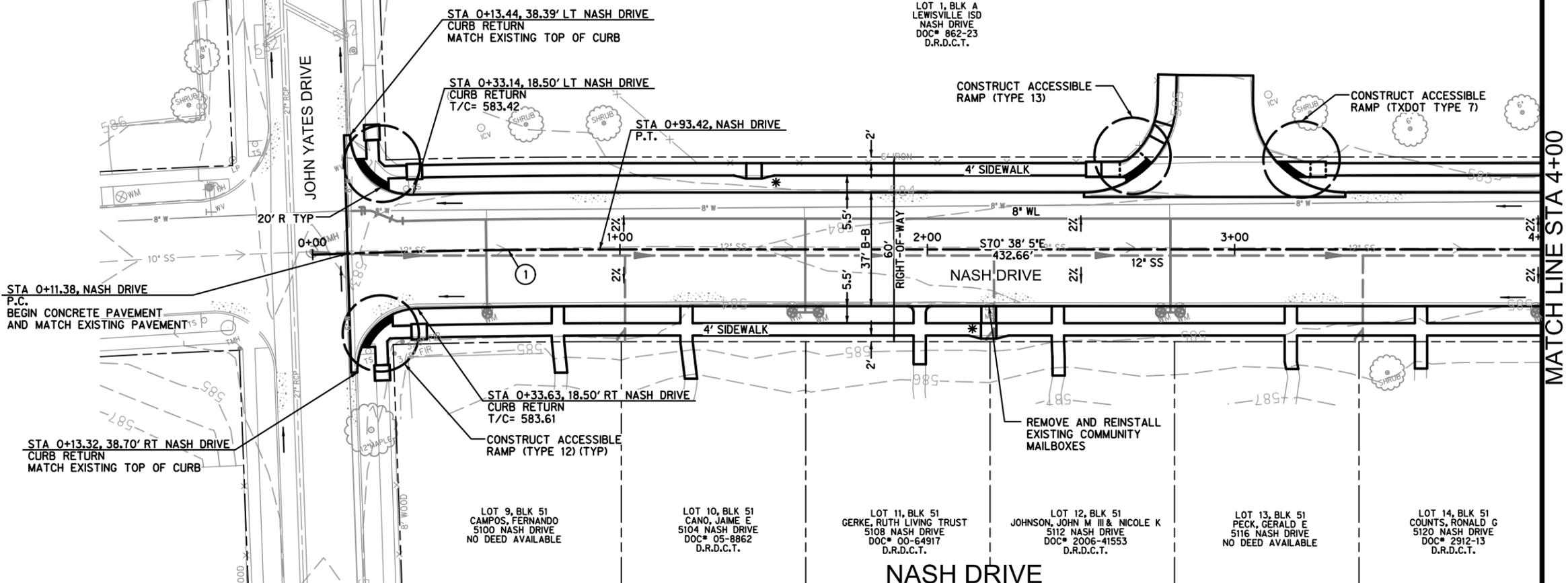
SHEET
7
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

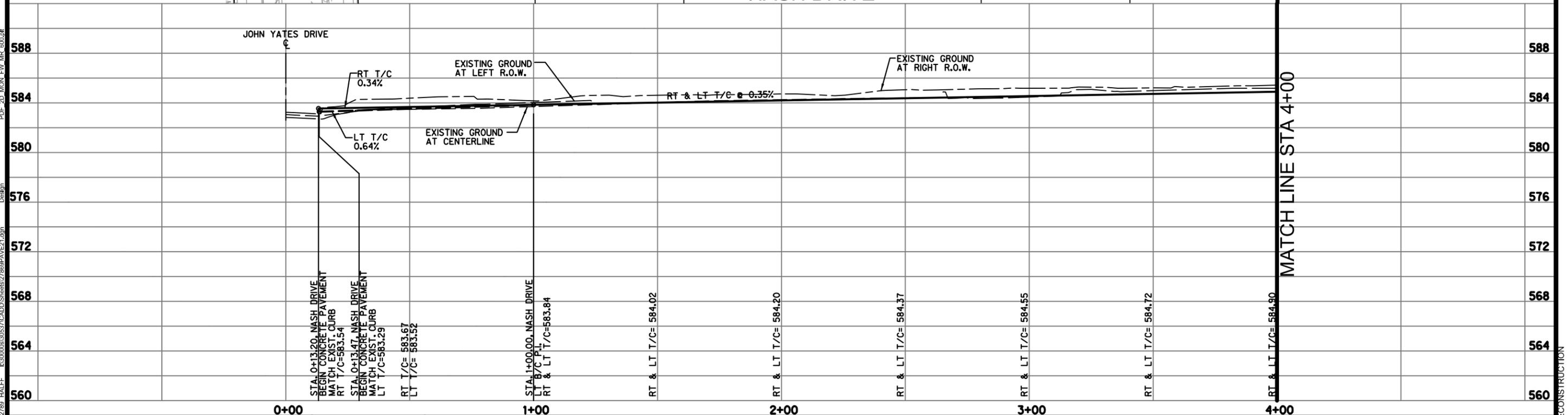
1	A=2' 8" 28'
	R=2500.00'
	L=93.42'
	T=46.72'
	CB=S 71° 42' 19" E
	CL=93.42'



NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:30:02 PM aht2789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE21.dgn Design PDF 2D MON FV MR 600.rvt

NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	

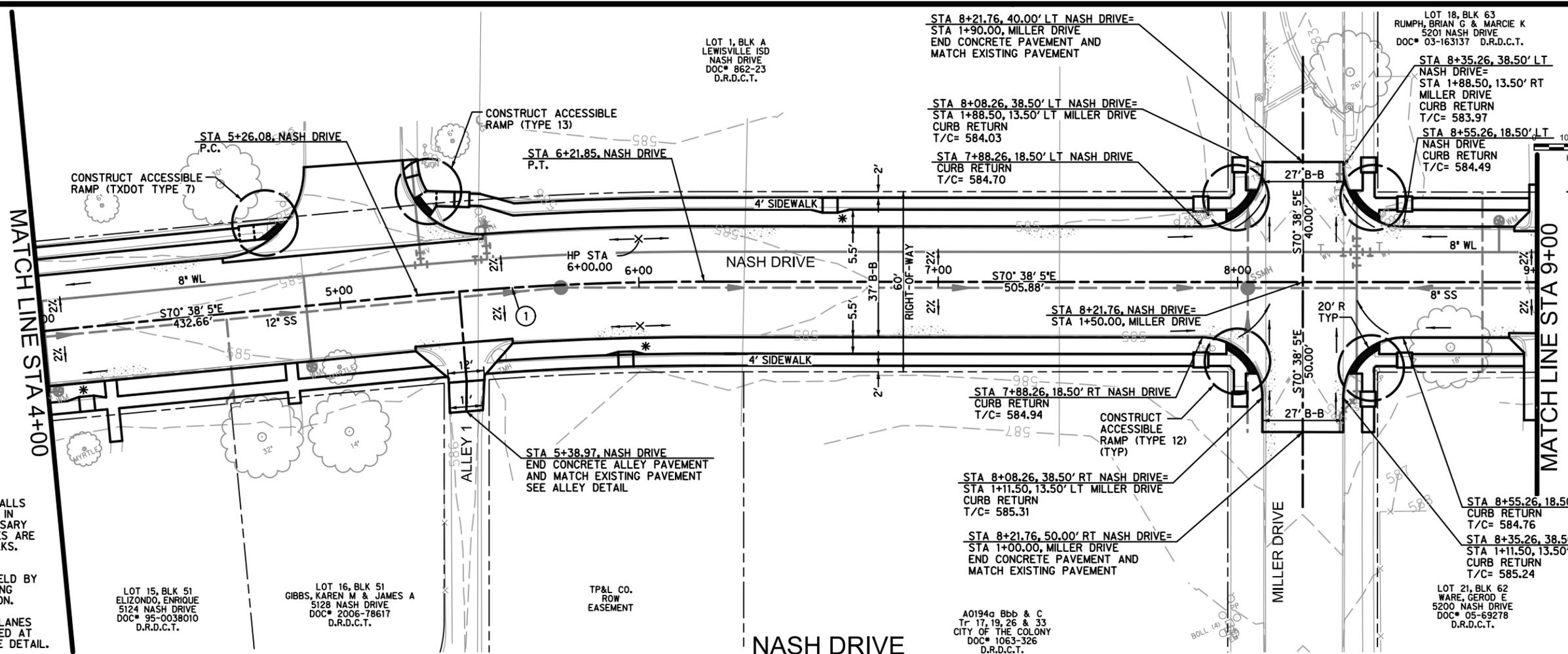
FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

NASH DRIVE
 PLAN AND PROFILE
 STA 0+00 TO STA 4+00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 8
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

① $\Delta=5^{\circ} 29' 12''$
 $R=1000.02'$
 $L=95.76'$
 $T=47.92'$
 $CB=S 67^{\circ} 53' 29'' E$
 $CL=95.73'$

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.

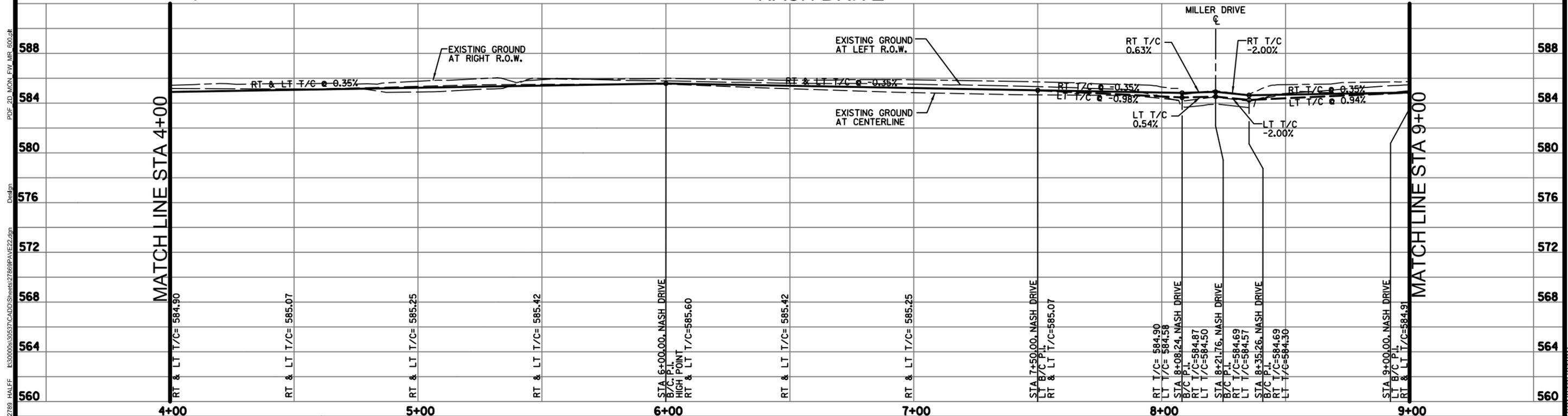
LOT 15, BLK 51
 ELIZONDO, ENRIQUE
 5124 NASH DRIVE
 DOC# 95-0038010
 D.R.D.C.T.

LOT 16, BLK 51
 GIBBS, KAREN M & JAMES A
 5128 NASH DRIVE
 DOC# 2006-78617
 D.R.D.C.T.

TP&L CO.
 ROW
 EASEMENT

A0194g Bbb & C
 T 17, 19, 26 & 33
 CITY OF THE COLONY
 DOC# 1063-326
 D.R.D.C.T.

LOT 21, BLK 62
 WARE, GEROD E
 5200 NASH DRIVE
 DOC# 05-69278
 D.R.D.C.T.



2/17/2015 2:30:04 PM a02789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE22.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE22.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

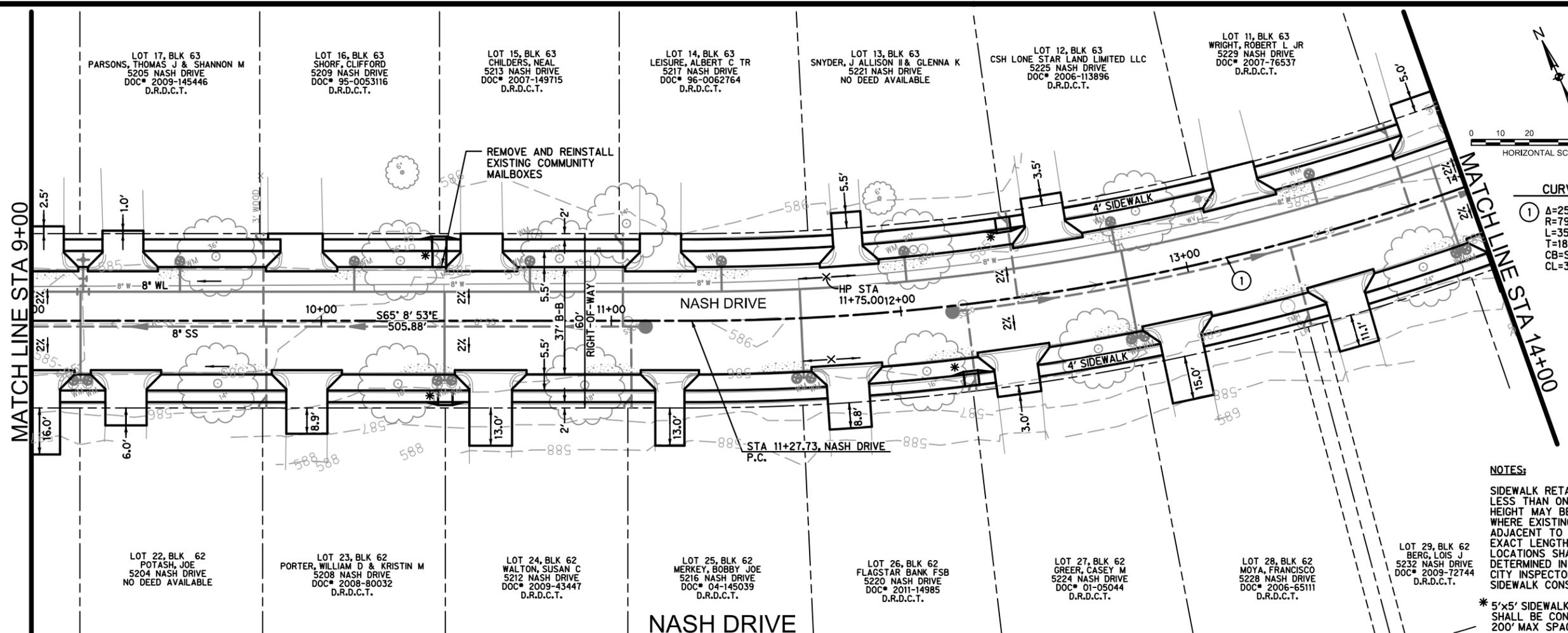


NASH DRIVE
 PLAN AND PROFILE
 STA 4+00 TO STA 9+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 9

CITY BID No.
 69-11-15-PHASE V



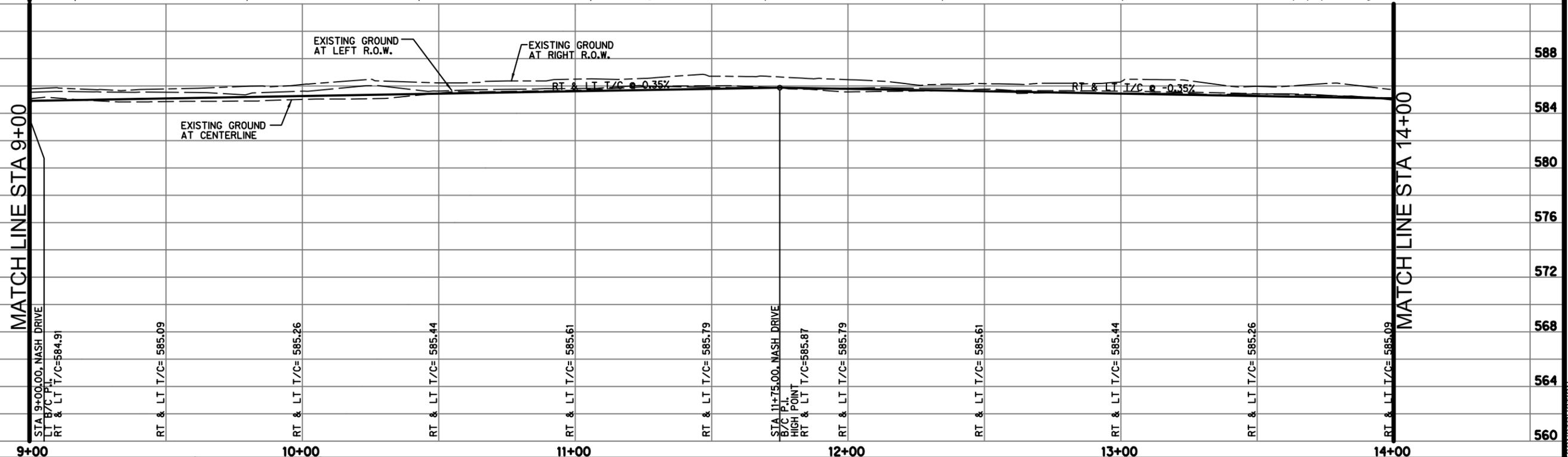
CURVE DATA

① $\Delta=25^\circ 39' 1''$
 $R=795.00'$
 $L=355.91'$
 $T=180.99'$
 $CB=S 77^\circ 58' 23'' E$
 $CL=352.94'$

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:30:07 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE23.dgn Design PDF 2D MON FV MR 600.plt

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE23.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

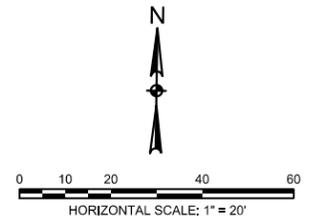
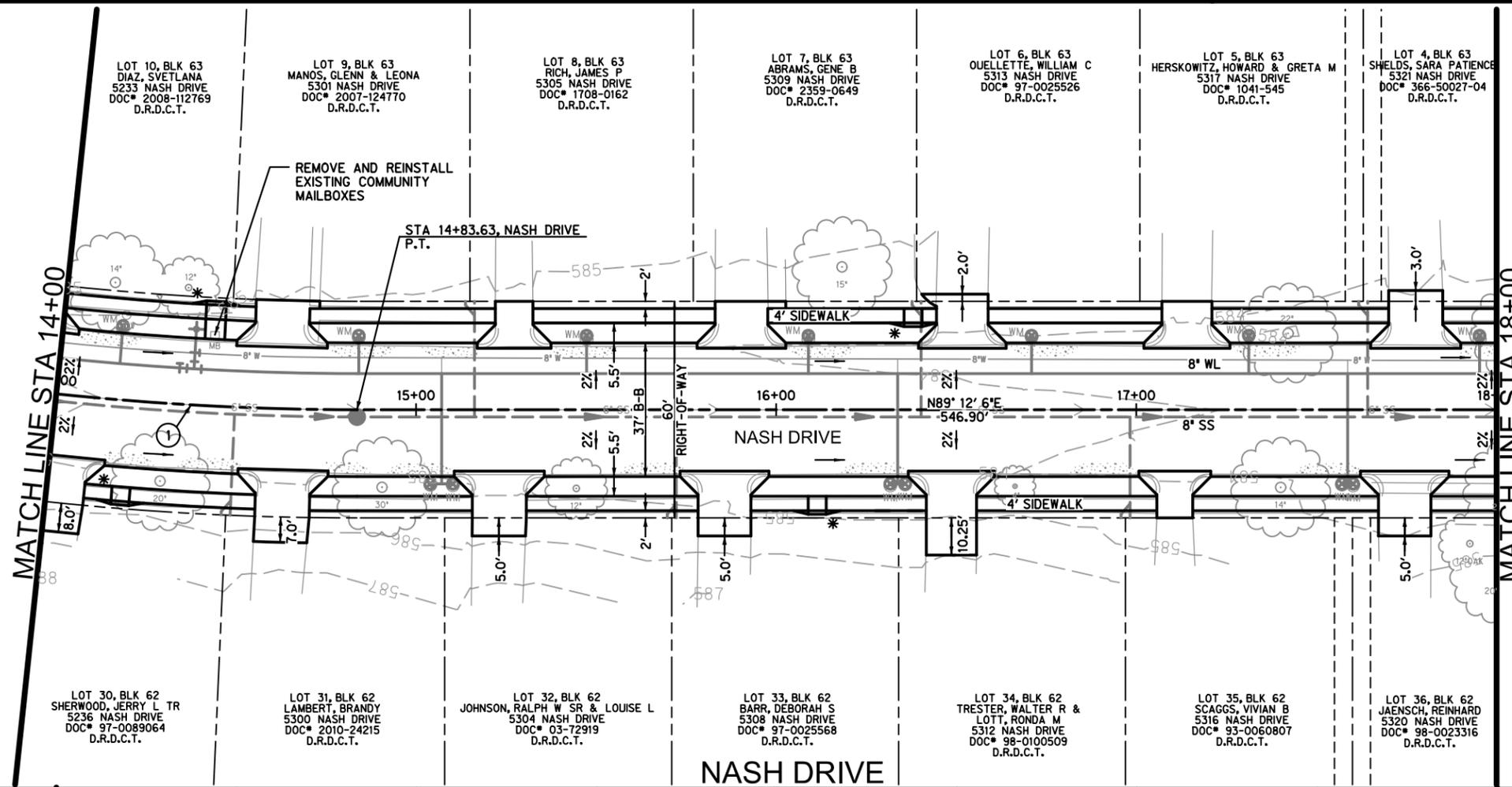


NASH DRIVE
 PLAN AND PROFILE
 STA 9+00 TO STA 14+00

PHASE V STREET RECONSTRUCTION

SHEET
 10

CITY BID No.
 69-11-15-PHASE V



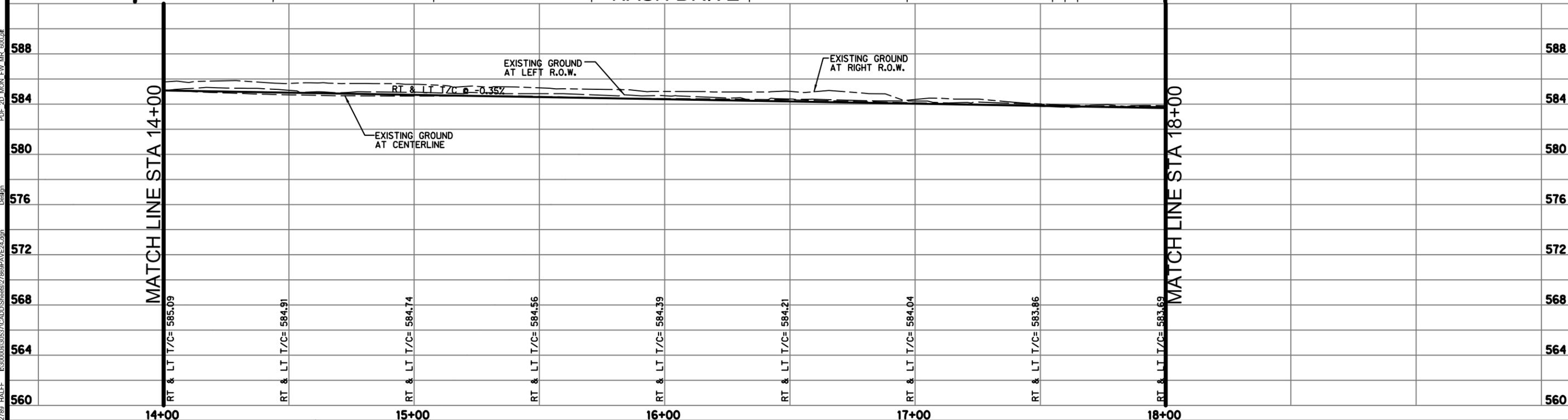
CURVE DATA

① A=25° 39' 1"
 R=795.00'
 L=355.91'
 T=180.99'
 CB=N 77° 58' 23" W
 CL=352.94'

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:30:09 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869PAVE24.dgn

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. 1" = 20' VERT. 1" = 4' AVO: 30537 FILE: 27869PAVE24.dgn
CADD DRAWN	
B.L.M. CHECKED	



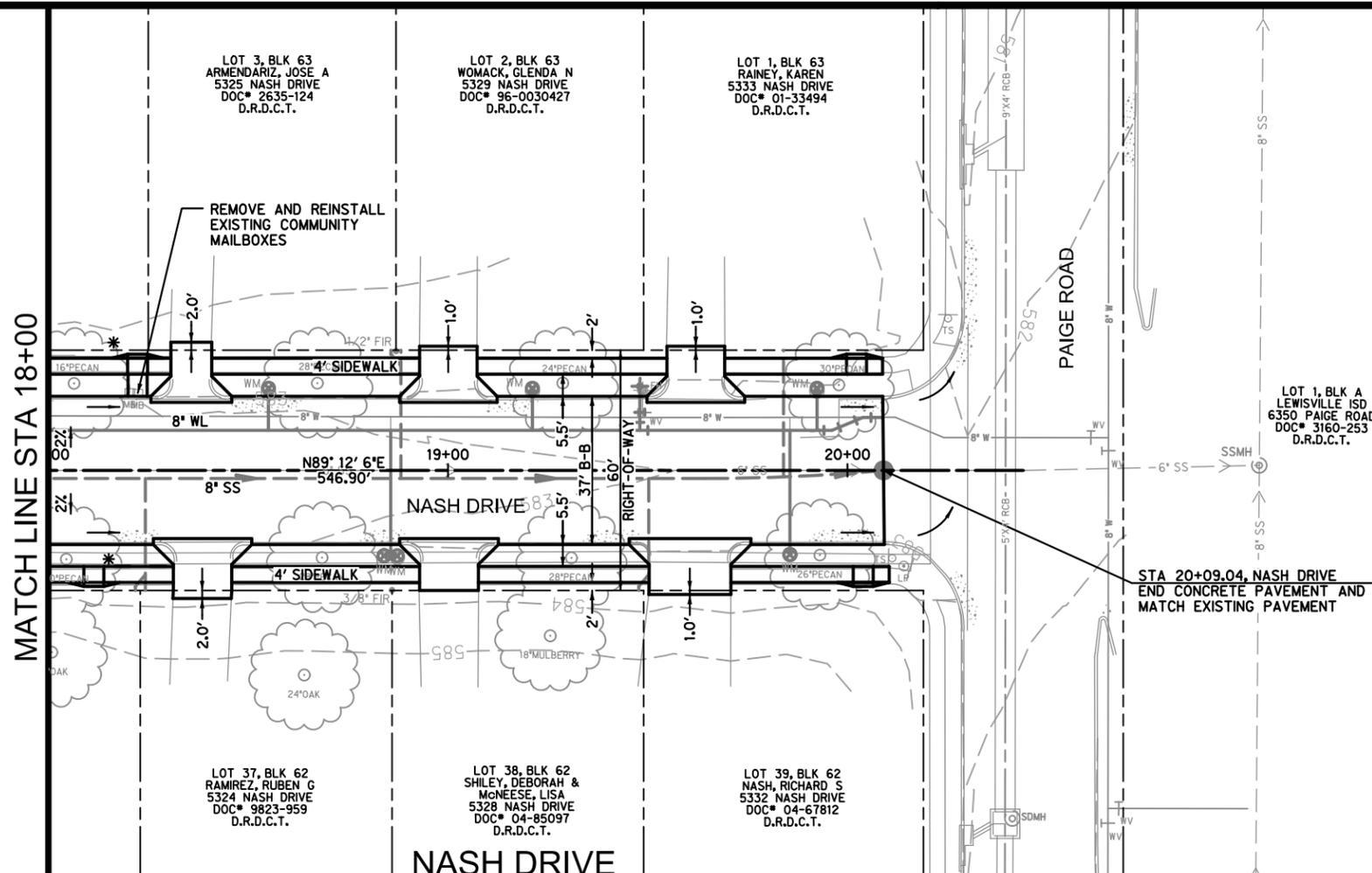
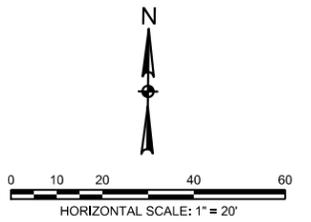
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

NASH DRIVE
 PLAN AND PROFILE
 STA 14+00 TO STA 18+00

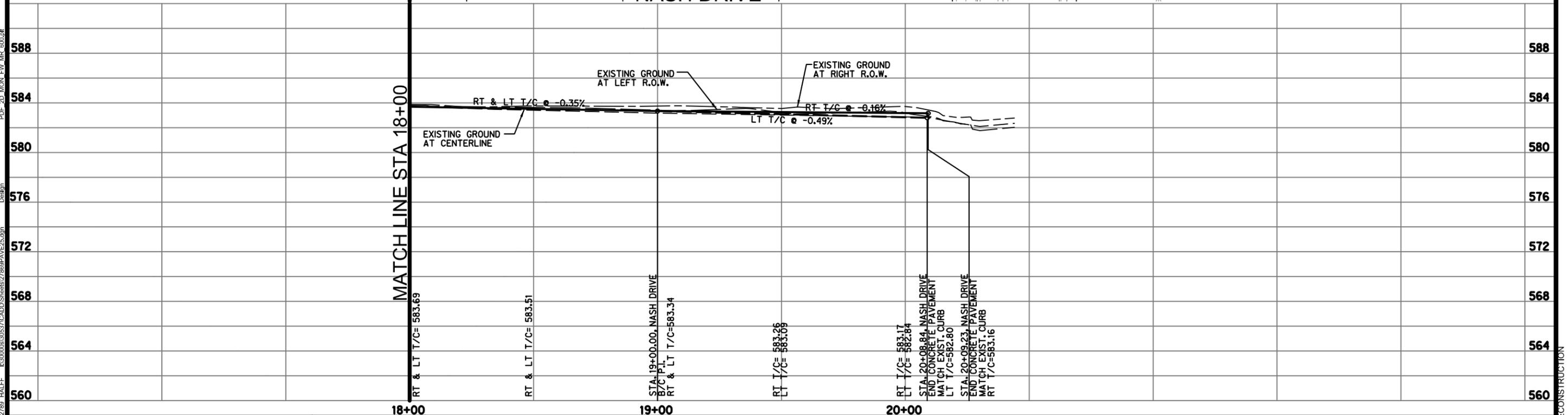
PHASE V STREET
 RECONSTRUCTION

SHEET
 11

CITY BID No.
 69-11-15-PHASE V



NOTES:
 SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.
 * 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:30:11 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE25.dgn Design PDF 2D MON FV MR 600.plt

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE25.dgn
CADD DRAWN	
B.L.M. CHECKED	

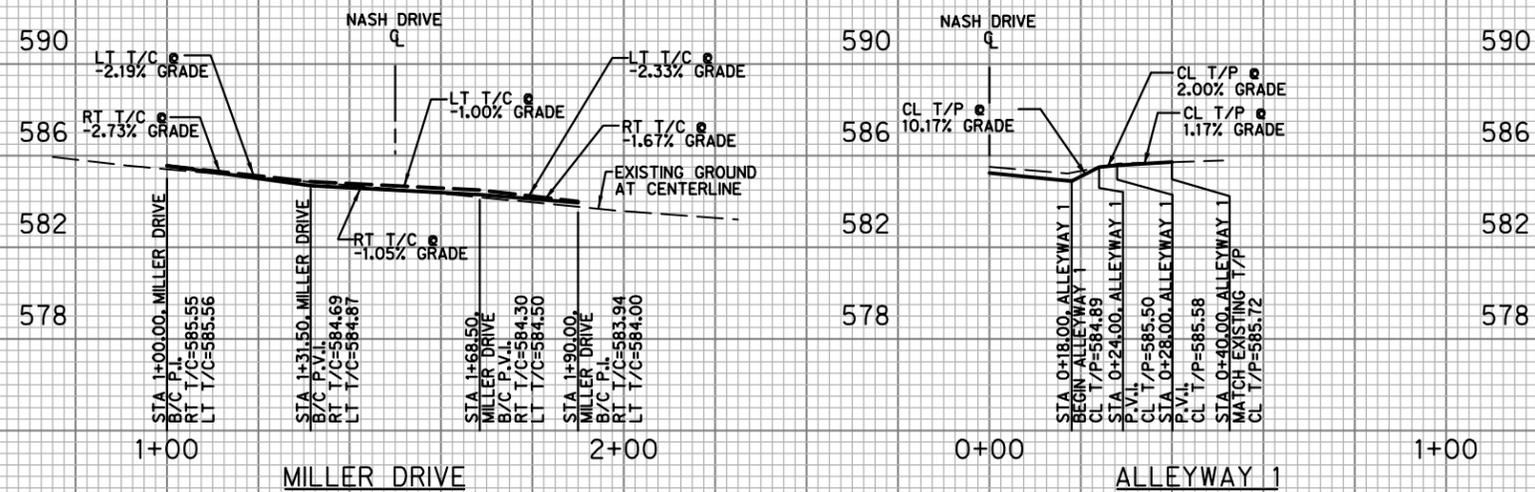


NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE
 PLAN AND PROFILE
 STA 18+00 TO END
 PHASE V STREET
 RECONSTRUCTION

SHEET
 12
CITY BID No.
 69-11-15-PHASE V



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE53.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

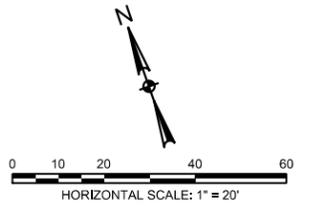
THE COLONY
 City by the Lake

NASH DRIVE
 SIDE STREET PROFILES

PHASE V STREET
 RECONSTRUCTION

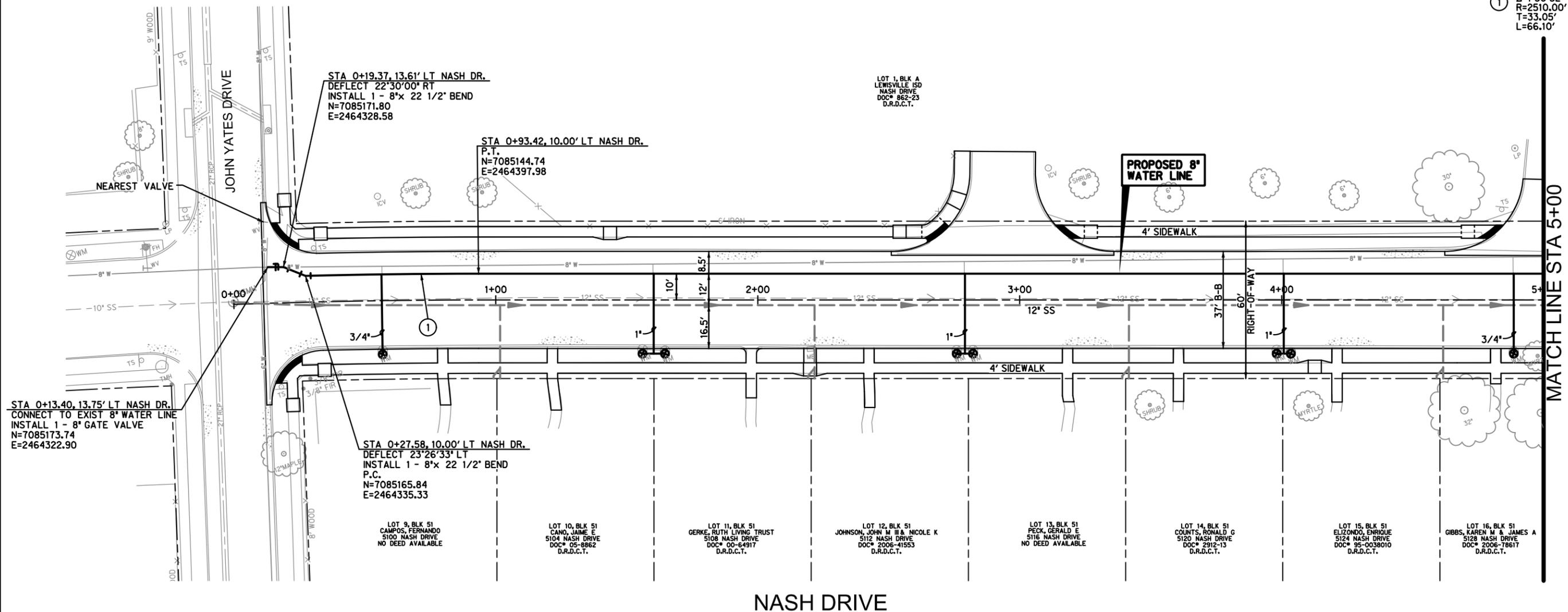
SHEET
 13

CITY BID No.
 69-11-15-PHASE V



CURVE DATA

①	A=1'30'32"
	R=2510.00'
	T=33.05'
	L=66.10'



STA 0+13.40, 13.75' LT NASH DR.
CONNECT TO EXIST 8" WATER LINE
INSTALL 1 - 8" GATE VALVE
N=7085173.74
E=2464322.90

STA 0+19.37, 13.61' LT NASH DR.
DEFLECT 22°30'00" RT
INSTALL 1 - 8" x 22 1/2" BEND
N=7085171.80
E=2464328.58

STA 0+93.42, 10.00' LT NASH DR.
P.T.
N=7085144.74
E=2464397.98

STA 0+27.58, 10.00' LT NASH DR.
DEFLECT 23°26'33" LT
INSTALL 1 - 8" x 22 1/2" BEND
P.C.
N=7085165.84
E=2464335.33

LOT 9, BLK 51
CAMPOS, FERNANDO
5100 NASH DRIVE
NO DEED AVAILABLE

LOT 10, BLK 51
CANO, JAIME E
5104 NASH DRIVE
DOC# 05-8862
D.R.D.C.T.

LOT 11, BLK 51
GERKE, RUTH LYING TRUST
5108 NASH DRIVE
DOC# 00-64917
D.R.D.C.T.

LOT 12, BLK 51
JOHNSON, JOHN M III & NICOLE K
5112 NASH DRIVE
DOC# 2006-41553
D.R.D.C.T.

LOT 13, BLK 51
PECK, GERALD E
5116 NASH DRIVE
NO DEED AVAILABLE

LOT 14, BLK 51
COURTS, RONALD C
5120 NASH DRIVE
DOC# 2912-13
D.R.D.C.T.

LOT 15, BLK 51
ELIZONDO, ENRIQUE
5124 NASH DRIVE
DOC# 95-0038010
D.R.D.C.T.

LOT 16, BLK 51
GIBBS, KAREN M & JAMES A
5128 NASH DRIVE
DOC# 2006-78617
D.R.D.C.T.

NASH DRIVE

NOTE:
1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:30:16 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869\UWTR19.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869\UWTR19.dgn

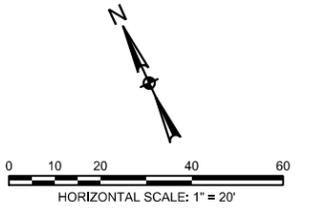
NASH DRIVE
WATER LINE PLAN
STA 0+00 TO STA 5+00

PHASE V STREET
RECONSTRUCTION

SHEET
14

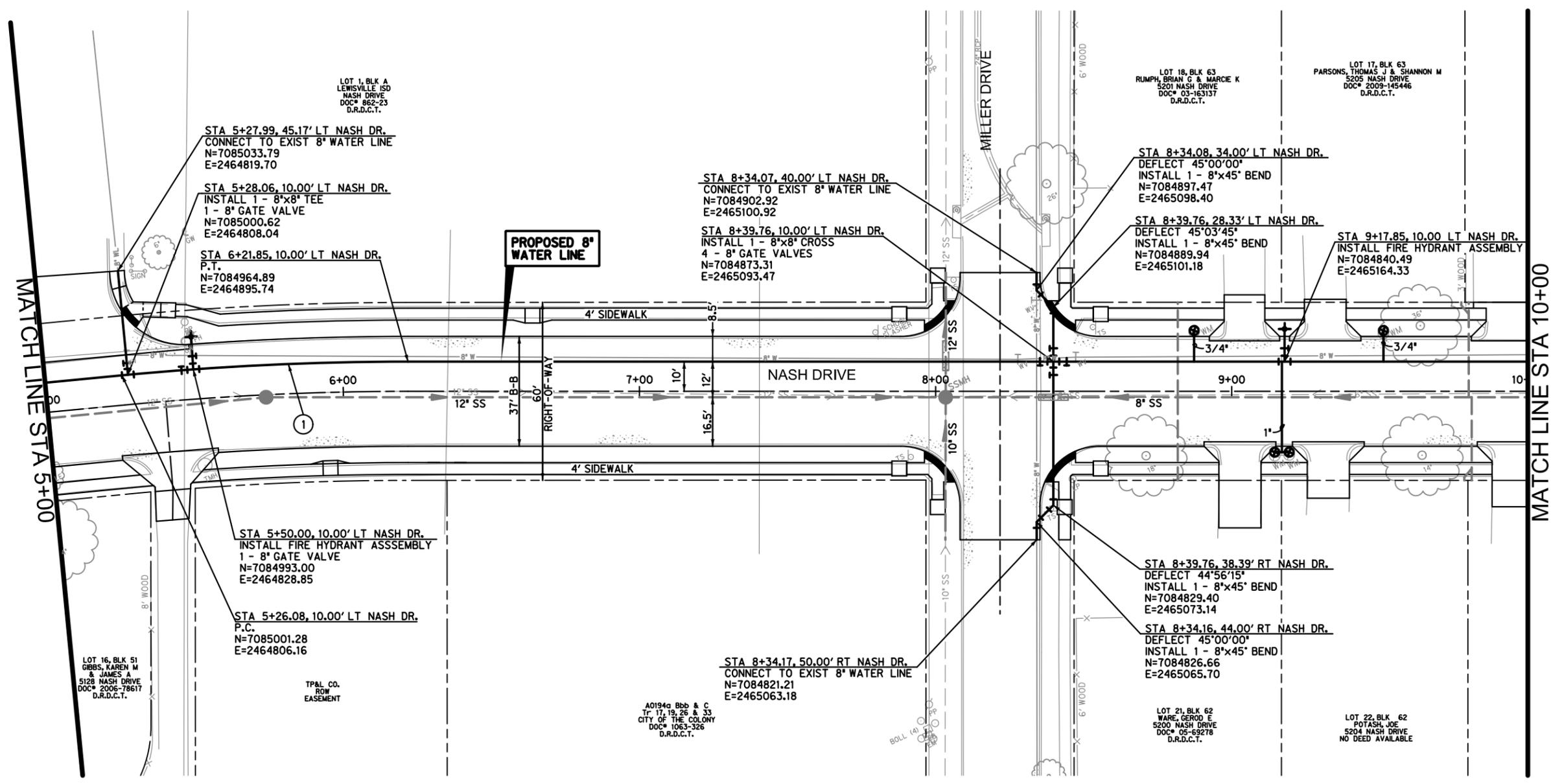
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

① $\Delta=5^{\circ}29'12''$
 $R=1010.02'$
 $T=48.40'$
 $L=96.72'$



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:30:18 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869\UWTR20.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869\UWTR20.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

THE COLONY
 City by the Lake

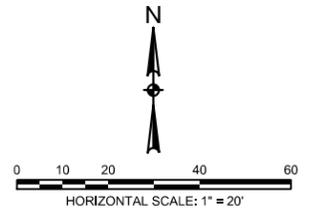
NASH DRIVE
 WATER LINE PLAN
 STA 5+00 TO STA 10+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 15

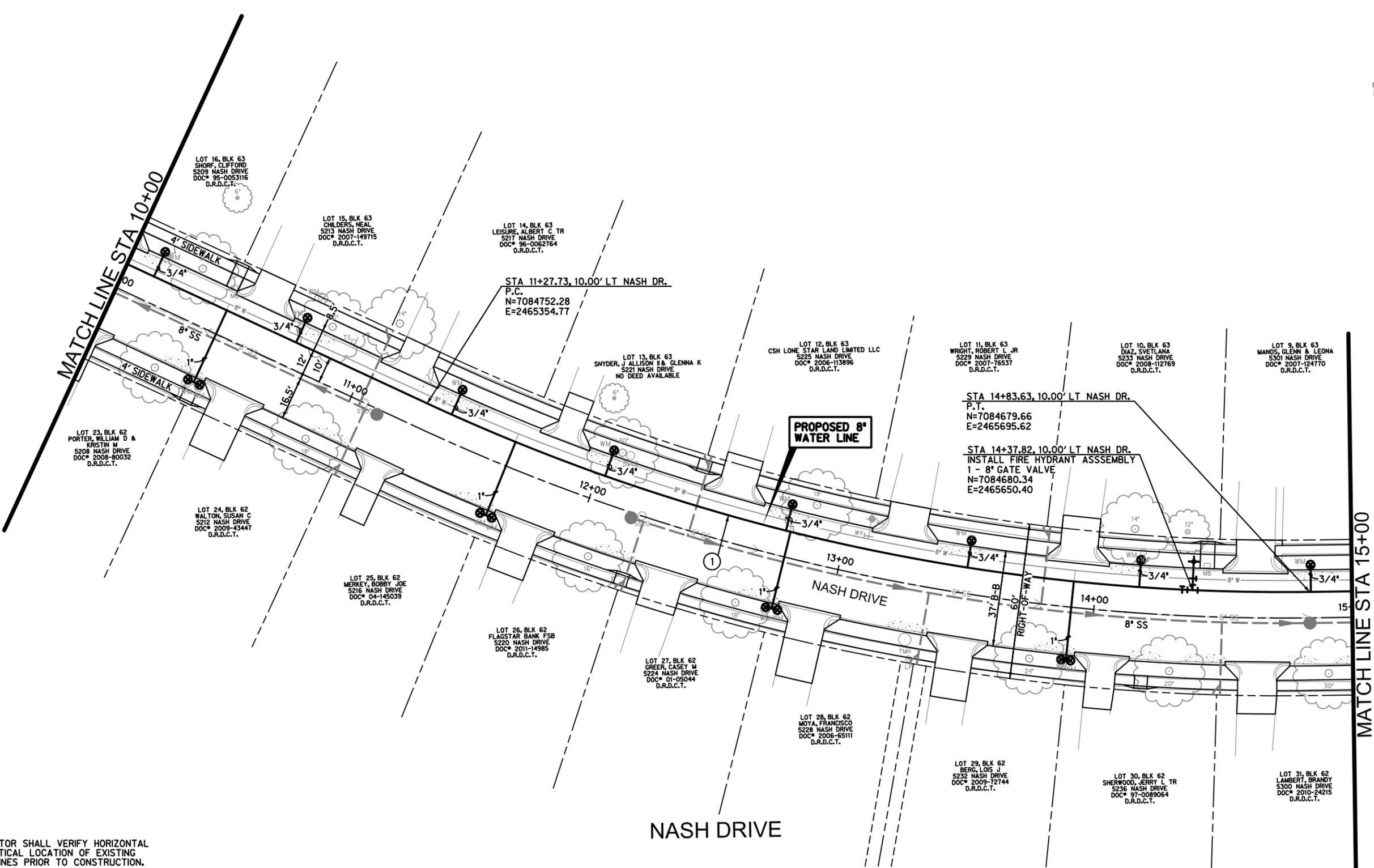
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

① Δ=25°39'01"
 R=785.00'
 T=178.71'
 L=351.43'



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:30:21 PM aht2789_half R:\30000s\30537\CADD\Sheets\27869UWTR21.dgn
 Design
 PDF 2D MON FV MR 600.plt

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	
B.L.M. CHECKED	
AVO: 30537 FILE: 27869UWTR21.dgn	

HALFF
 FIRM REGISTRATION NO. 312
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Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
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THE COLONY
 City by the Lake

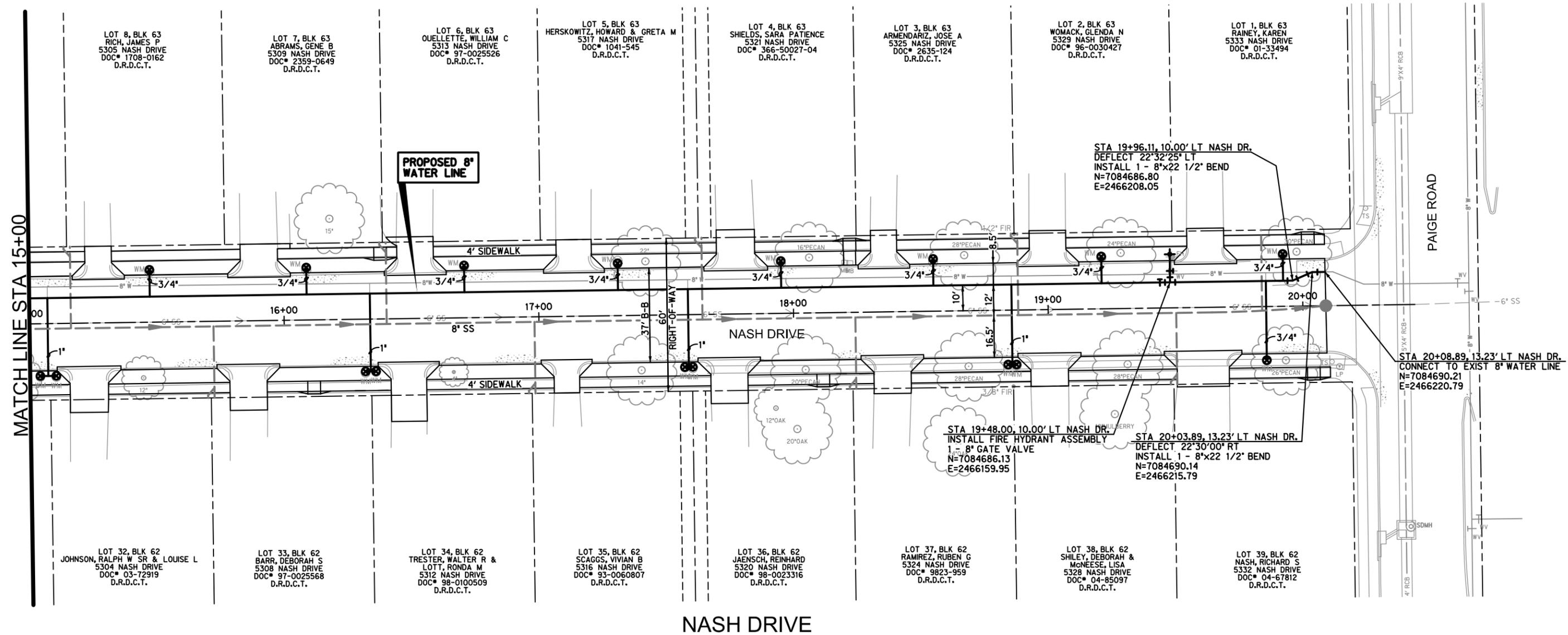
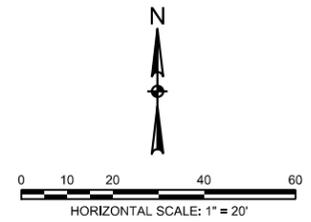
NASH DRIVE
 WATER LINE PLAN
 STA 10+00 TO STA 15+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 16

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:30:24 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869UWTR22.dgn
 PDF 2D MON FV MR 600.plt
 Design

NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR22.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Willis
 NAME: Leigh A. Willis
 DATE: 2/20/15
 TBPE FIRM *F-312

THE COLONY
 City by the Lake

NASH DRIVE
 WATER LINE PLAN
 STA 15+00 TO END
 PHASE V STREET
 RECONSTRUCTION

SHEET
 17
CITY BID No.
69-11-15-PHASE V

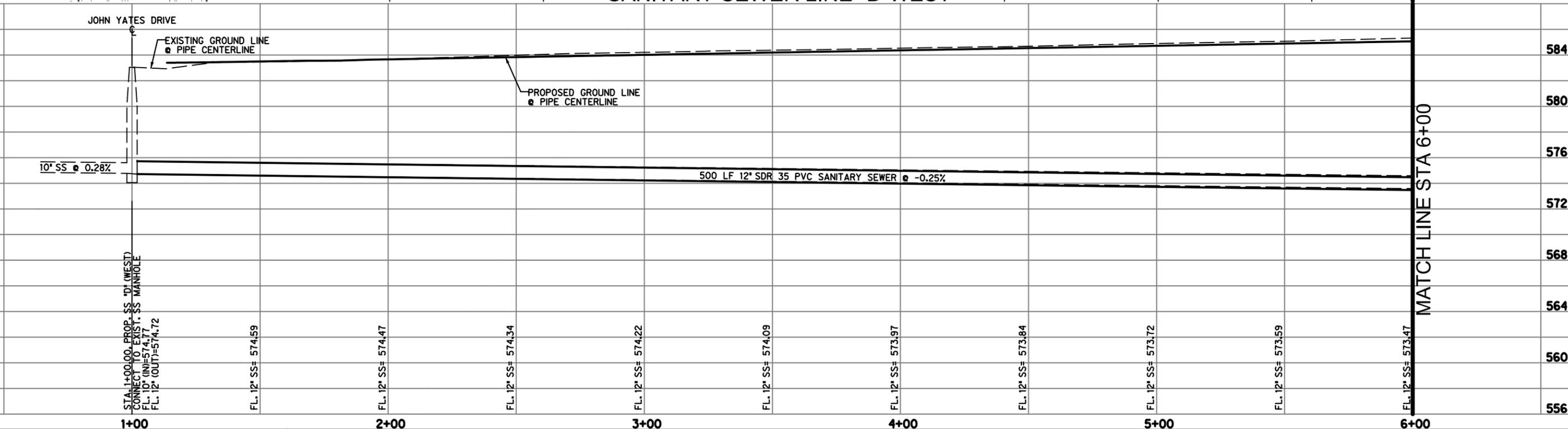
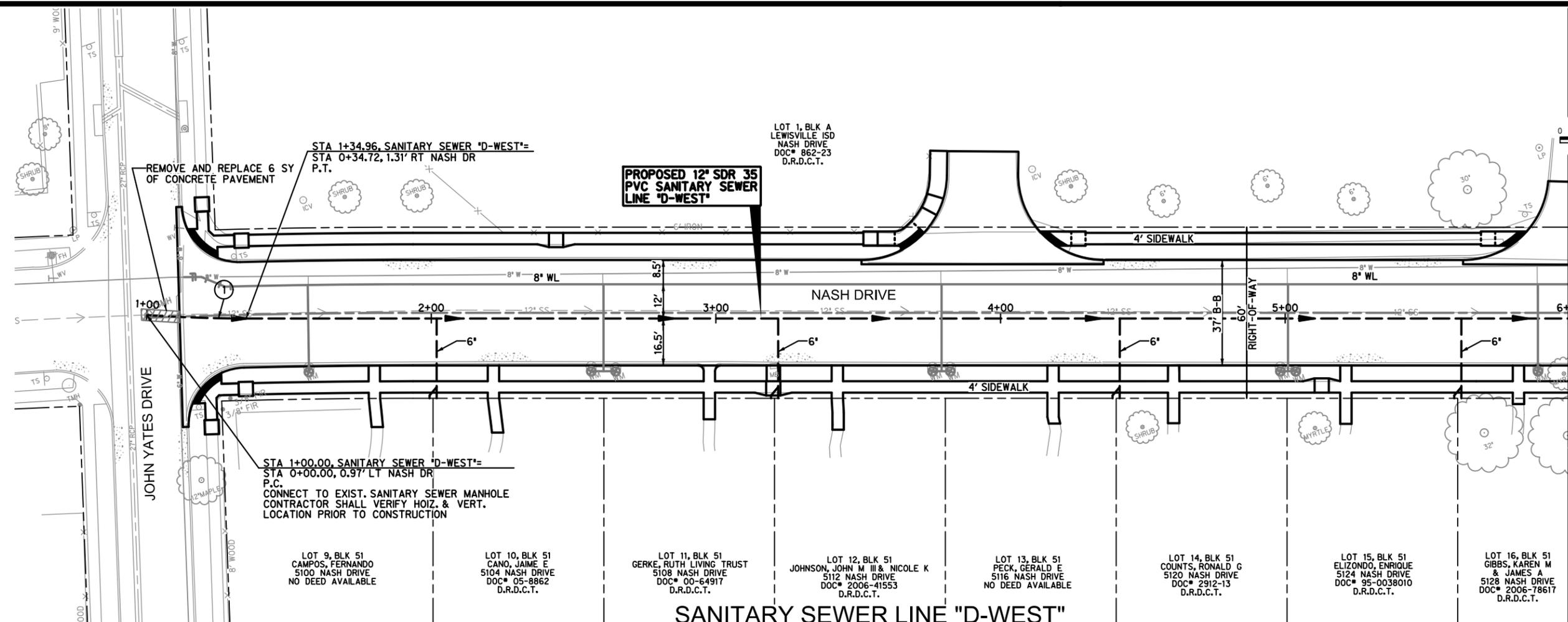
PHASE IV STREET RECONSTRUCTION



HORIZONTAL SCALE: 1" = 20'

CURVE DATA

① $\Delta=4' 0' 21"$
 $R=500.00'$
 $L=34.96'$
 $T=17.49'$
 $CB=N 68' 37' 54" W$
 $CL=34.96'$



2/17/2015 2:30:26 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869\USAN17.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN17.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



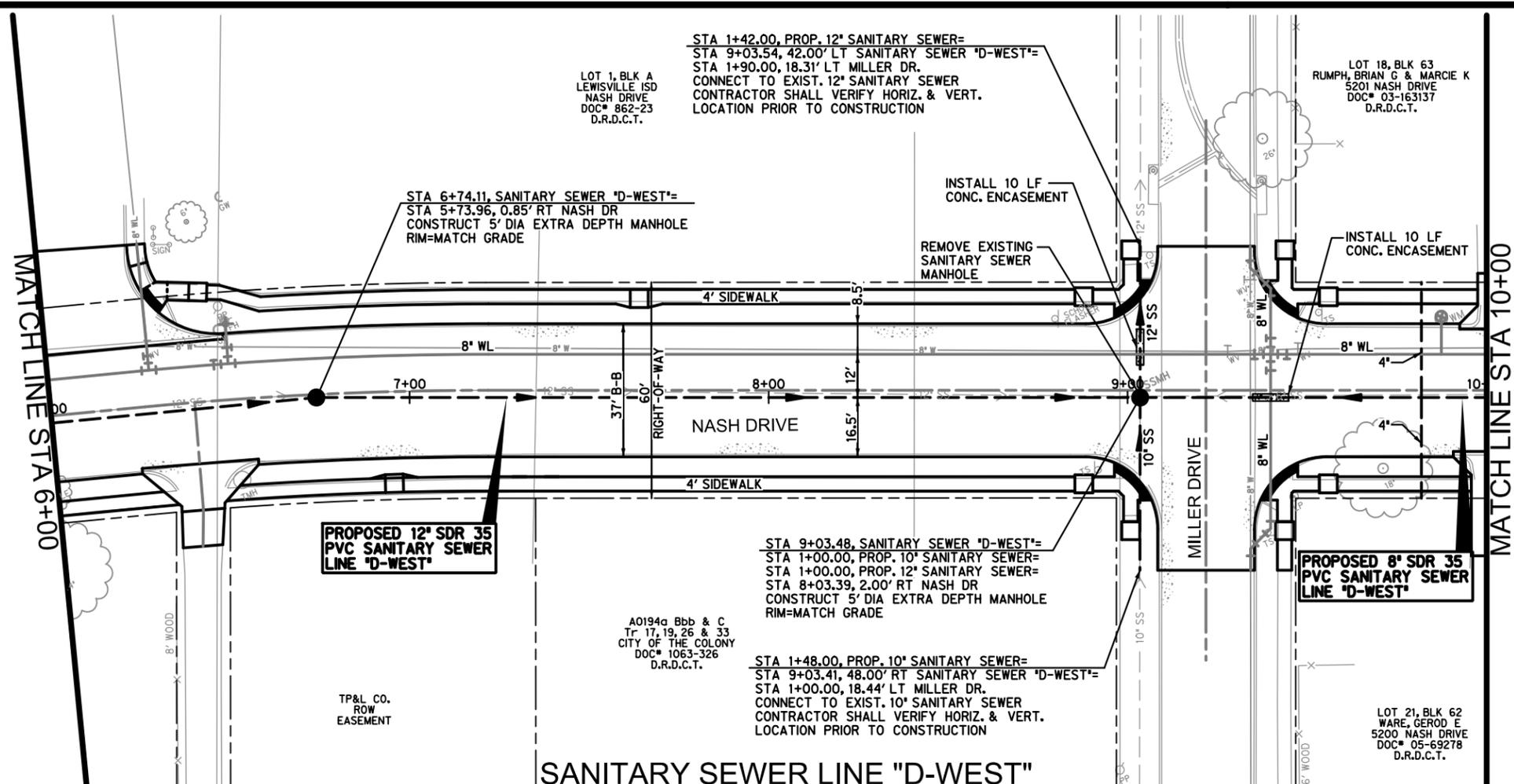
SANITARY SEWER LINE "D-WEST"
 PLAN AND PROFILE
 STA 1+00 TO STA 6+00

PHASE V STREET
 RECONSTRUCTION

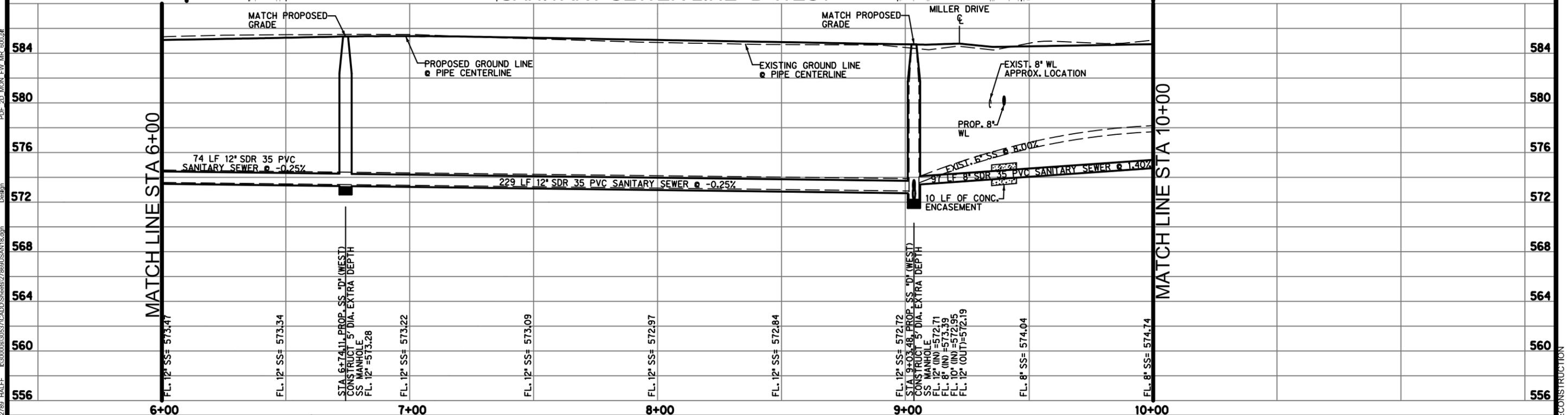
SHEET
 18

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



SANITARY SEWER LINE "D-WEST"



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	HORIZ. : 1" = 20'
B.L.M. CHECKED	VERT. : 1" = 4'
	AVO: 30537
	FILE: 27869USAN18.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784

LEIGH A. HOLLIS
LICENSED PROFESSIONAL ENGINEER
103573

NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

SANITARY SEWER LINE "D-WEST"
PLAN AND PROFILE
STA 6+00 TO STA 10+00

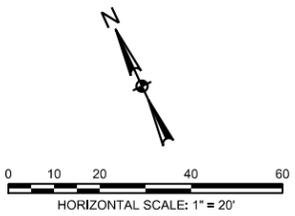
PHASE V STREET RECONSTRUCTION

SHEET 19

CITY BID No. 69-11-15-PHASE V

2/17/2015 2:30:29 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869USAN18.dgn Design

PHASE IV STREET RECONSTRUCTION



MATCH LINE STA 10+00

MATCH LINE STA 10+00

10+00

11+00

12+00

LOT 17, BLK 63
PARSONS, THOMAS J & SHANNON M
5205 NASH DRIVE
DOC# 2009-145446
D.R.D.C.T.

LOT 16, BLK 63
SHORF, CLIFFORD
5209 NASH DRIVE
DOC# 95-0053116
D.R.D.C.T.

LOT 15, BLK 63
CHILDERS, NEAL
5213 NASH DRIVE
DOC# 2007-149715
D.R.D.C.T.

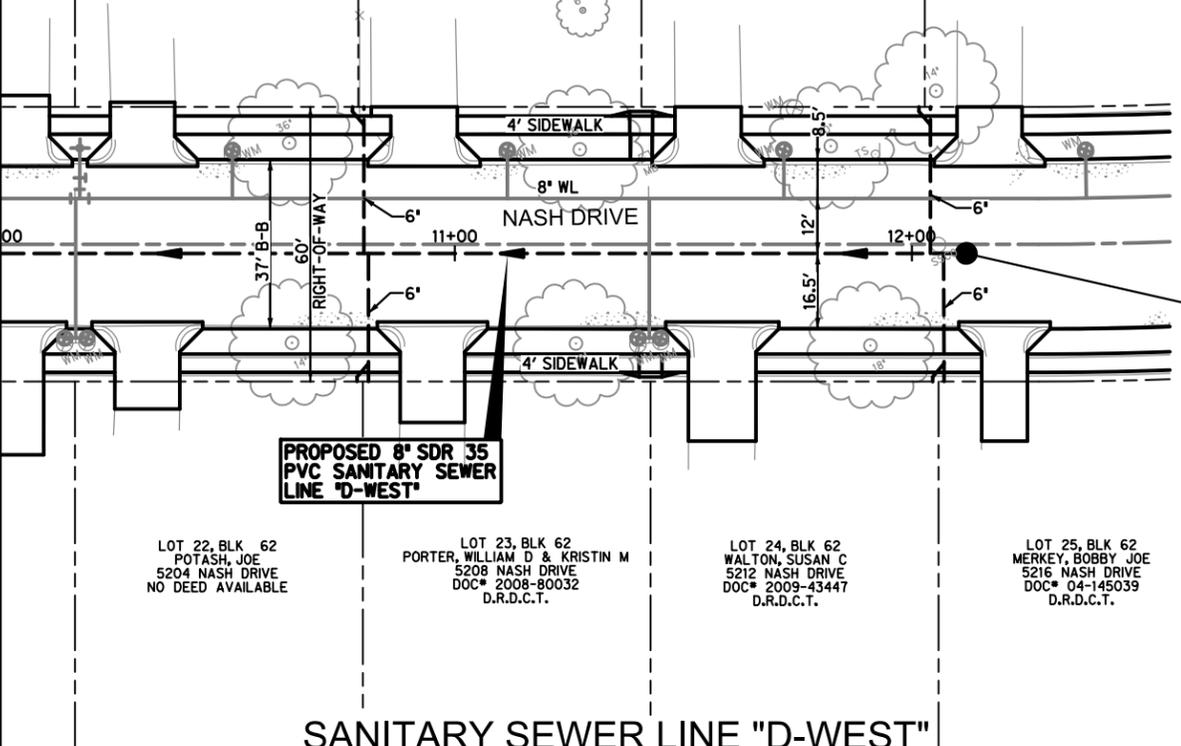
LOT 14, BLK 63
LEISURE, ALBERT C TR
5217 NASH DRIVE
DOC# 96-0062764
D.R.D.C.T.

LOT 22, BLK 62
POTASH, JOE
5204 NASH DRIVE
NO DEED AVAILABLE

LOT 23, BLK 62
PORTER, WILLIAM D & KRISTIN M
5208 NASH DRIVE
DOC# 2008-80032
D.R.D.C.T.

LOT 24, BLK 62
WALTON, SUSAN C
5212 NASH DRIVE
DOC# 2009-43447
D.R.D.C.T.

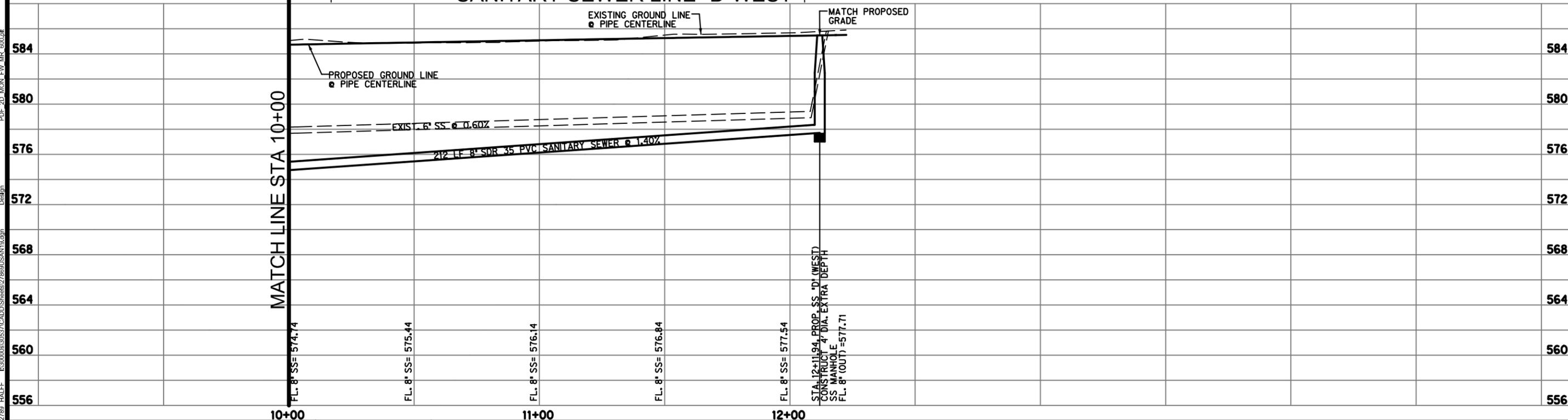
LOT 25, BLK 62
MERKEY, BOBBY JOE
5216 NASH DRIVE
DOC# 04-145039
D.R.D.C.T.



STA 12+11.94, SANITARY SEWER "D-WEST"
STA 11+11.86, 2.00' RT NASH DR
CONSTRUCT 4' DIA EXTRA DEPTH MANHOLE
RIM=MATCH GRADE

**PROPOSED 8" SDR 35
PVC SANITARY SEWER
LINE "D-WEST"**

SANITARY SEWER LINE "D-WEST"



2/17/2015 2:30:31 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869\USAN19.dgn

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN19.dgn
CADD DRAWN	
B.L.M. CHECKED	

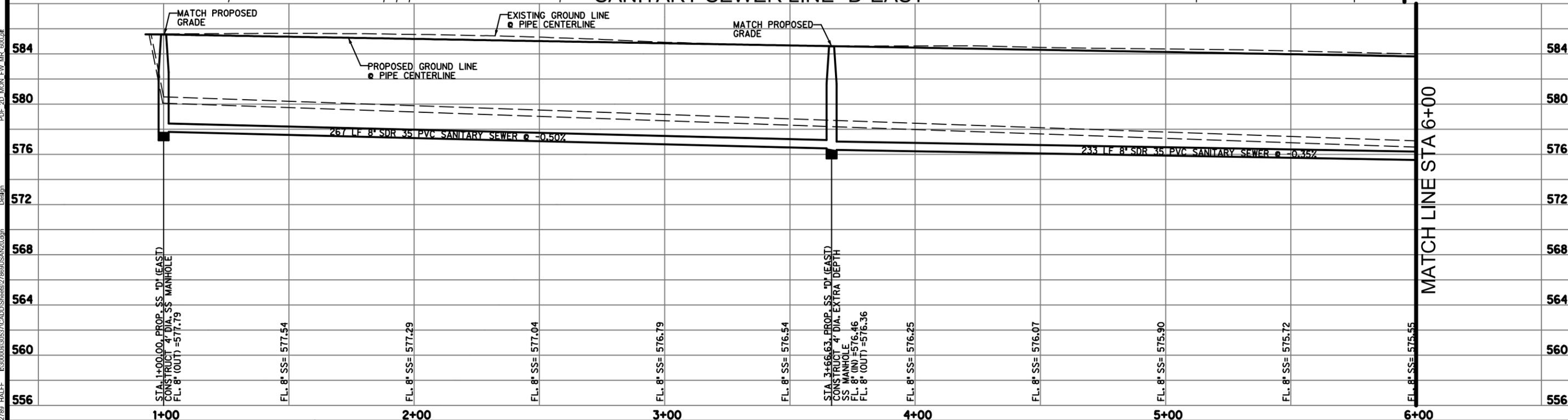
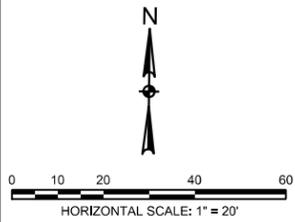
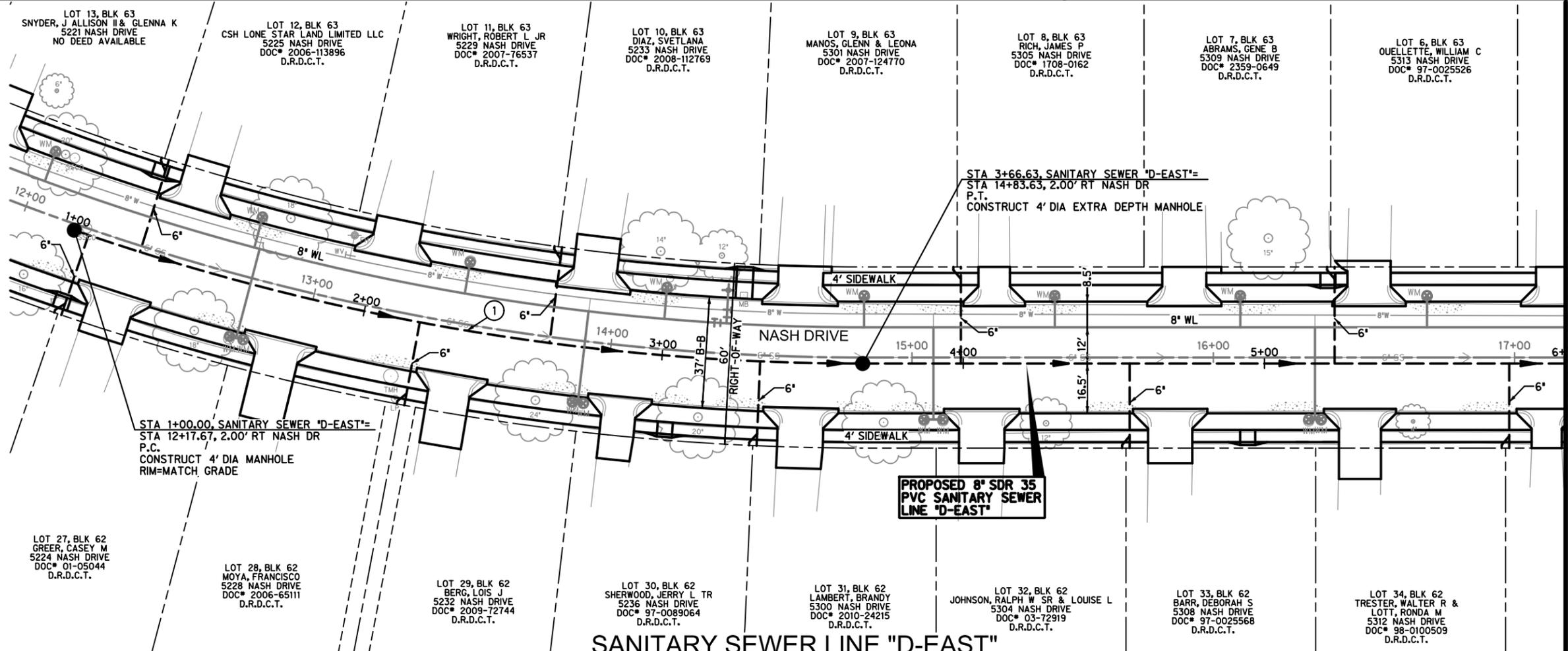
NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

SANITARY SEWER LINE "D-WEST"
PLAN AND PROFILE
STA 10+00 TO END

PHASE V STREET
RECONSTRUCTION

SHEET
20

CITY BID No.
69-11-15-PHASE V



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	HORIZ. : 1" = 20'
B.L.M. CHECKED	VERT. : 1" = 4'
	AVO: 30537
	FILE: 27869USAN20.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784

LEIGH A. HOLLIS
103573
LICENSED PROFESSIONAL ENGINEER

NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

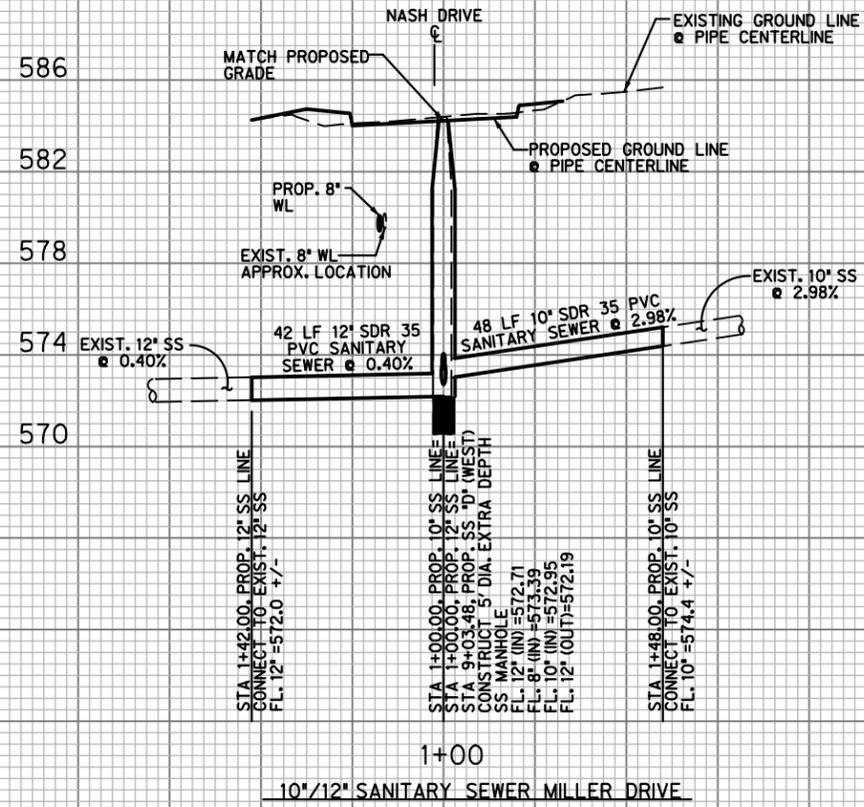
SANITARY SEWER LINE "D-EAST"
PLAN AND PROFILE
STA 1+00 TO STA 6+00

PHASE V STREET
RECONSTRUCTION

SHEET
21

CITY BID No.
69-11-15-PHASE V

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN23.dgn
CADD DRAWN	
B.L.M. CHECKED	

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 FIRM REGISTRATION NO. 312
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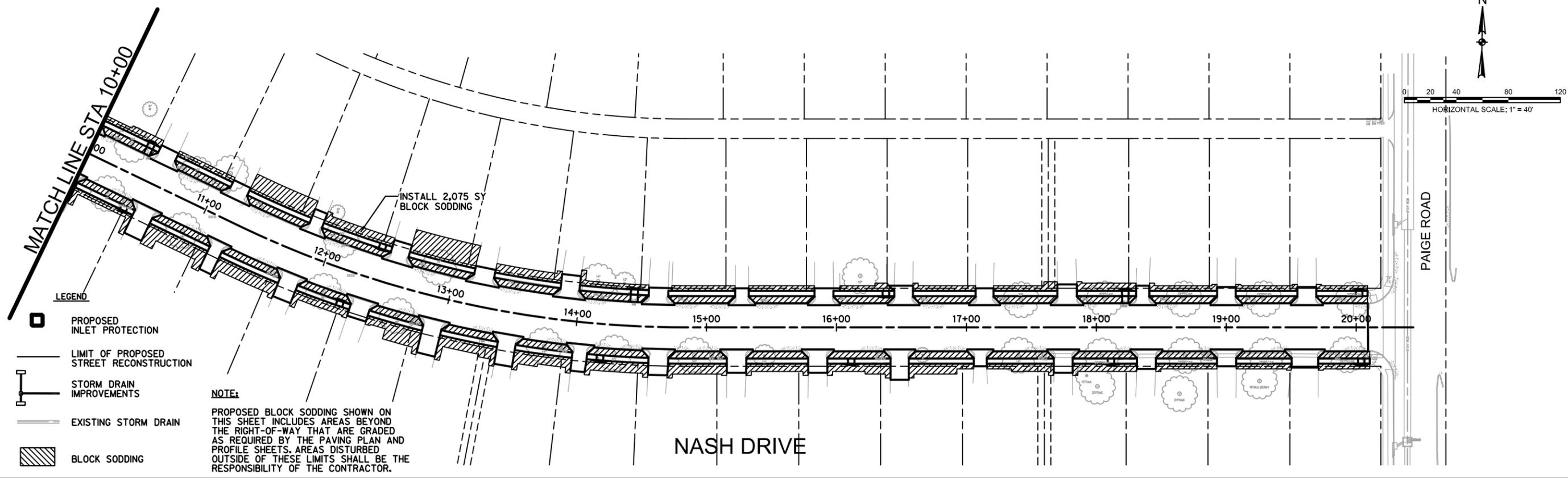
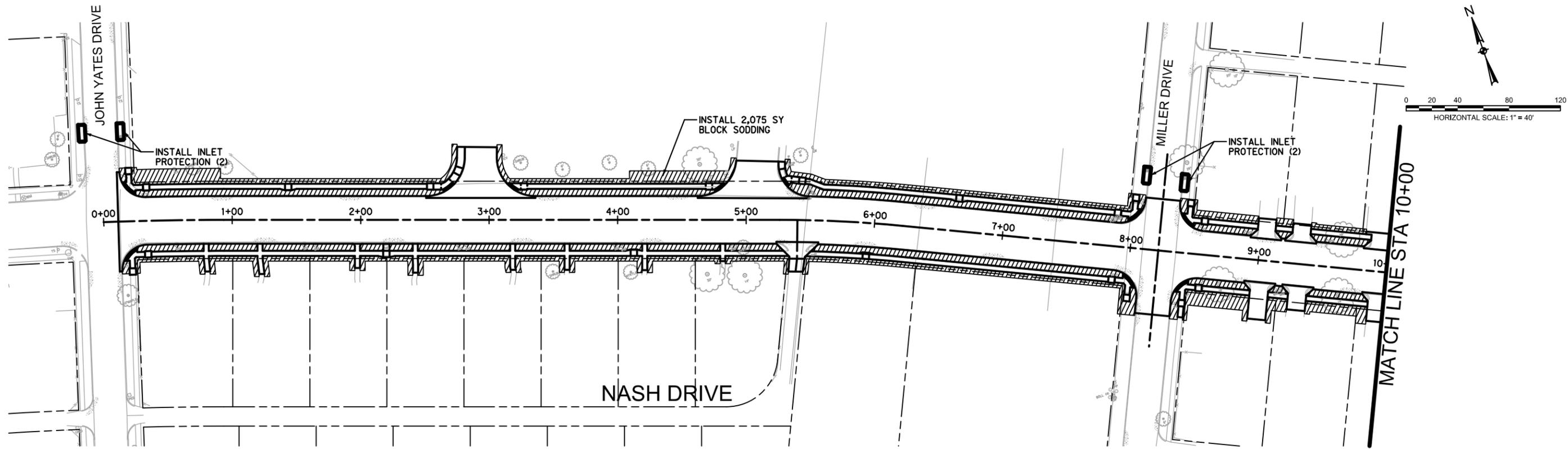
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

SANITARY SEWER LINE "D"
 LATERAL PROFILES
 PHASE V STREET
 RECONSTRUCTION

SHEET
 23
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



- LEGEND**
-  PROPOSED INLET PROTECTION
 -  LIMIT OF PROPOSED STREET RECONSTRUCTION
 -  STORM DRAIN IMPROVEMENTS
 -  EXISTING STORM DRAIN
 -  BLOCK SODDING

NOTE:
 PROPOSED BLOCK SODDING SHOWN ON THIS SHEET INCLUDES AREAS BEYOND THE RIGHT-OF-WAY THAT ARE GRADED AS REQUIRED BY THE PAVING PLAN AND PROFILE SHEETS. AREAS DISTURBED OUTSIDE OF THESE LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

2/17/2015 2:30:41 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869ECPL03.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869ECPL03.dgn

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 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
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Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

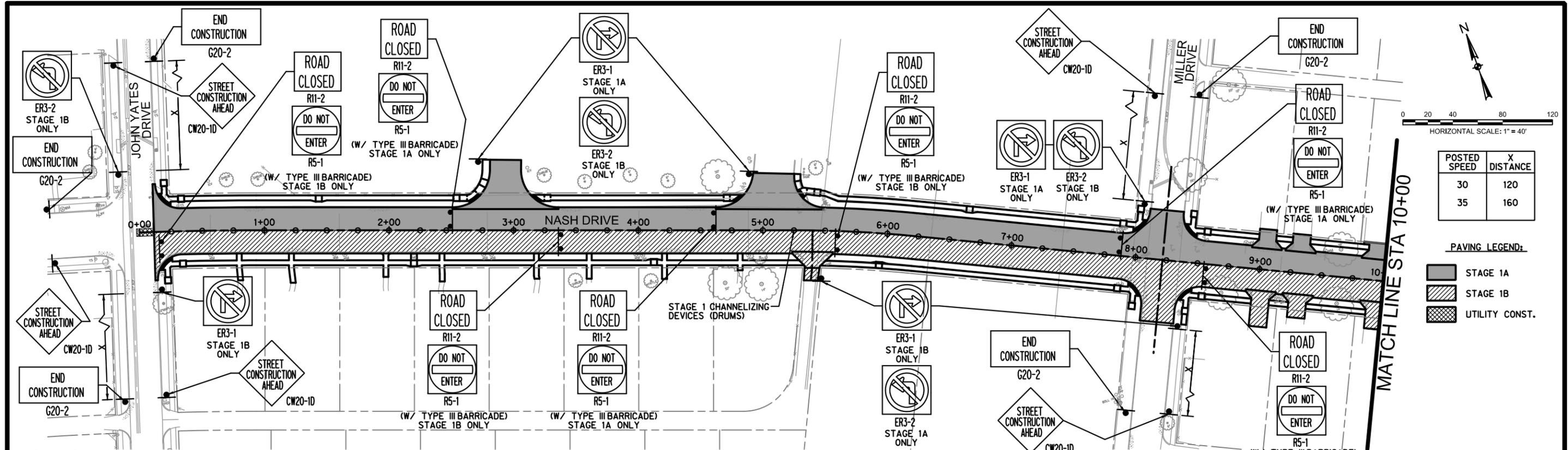


NASH DRIVE
 EROSION CONTROL PLAN

PHASE V STREET
 RECONSTRUCTION

SHEET
 24

CITY BID No.
 69-11-15-PHASE V



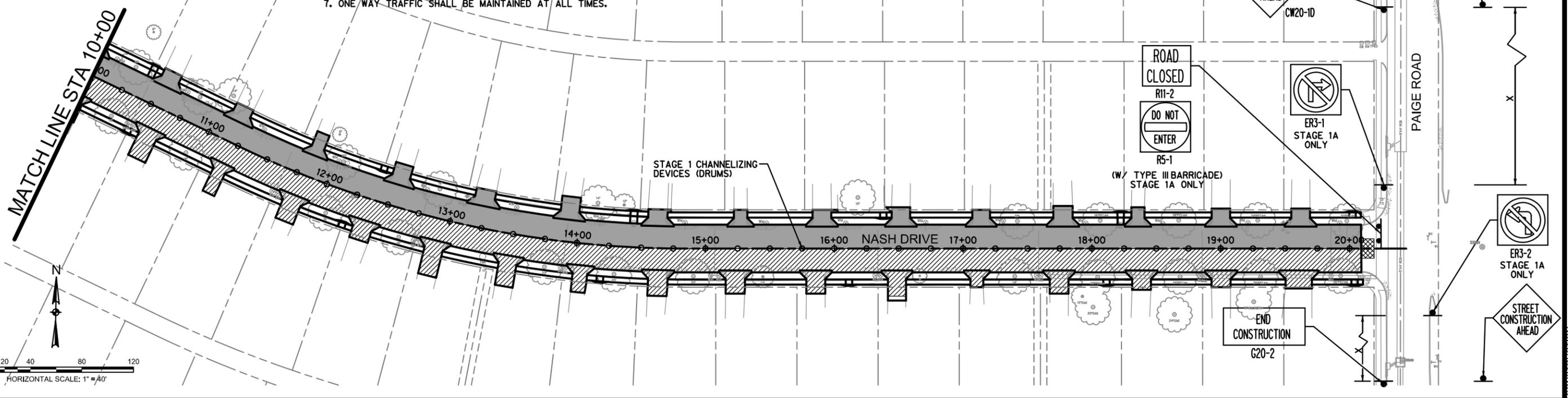
TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL DEVICES SHOWN ARE TO BE ERECTED DURING PAVING OPERATIONS. DURING EXISTING PAVEMENT REMOVAL AND UTILITY CONSTRUCTION WHILE TRAFFIC IS BEING ALLOWED ON THE SUBGRADE, THE CONTRACTOR SHALL ERECT ROAD CLOSED (R11-2) OR ROAD CLOSED TO THRU TRAFFIC (R11-4) AT THE ENTRANCE OF EACH STREET.
2. SEE SHEET 4 FOR GENERAL NOTES FOR TRAFFIC CONTROL.
3. FOR UTILITY WORK OCCUPYING SMALL AREAS SEE TCP(2-2b) DETAIL.

CONSTRUCTION SEQUENCING NOTES:

4. STAGES 1A & 1B MAY BE REVERSED.
5. TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE CONSIDERED AN ESTABLISHED MINIMUM. CONTRACTOR SHALL PROVIDE ADDITIONAL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE TMTUCD IN ORDER TO SAFELY GUIDE TRAFFIC AROUND ACTIVITIES NOT ADDRESSED BY THIS PLAN.
6. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY PRIOR TO BEGINNING WORK.
7. ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

1. CONSTRUCT UTILITIES. ONLY THE NECESSARY AMOUNT OF EXISTING PAVEMENT SHALL BE REMOVED TO INSTALL THE PROPOSED UTILITIES. UTILITY INSTALLATION AREAS SHALL BE BACKFILLED AND MADE PASSABLE USING AT LEAST 1-INCH OF TEMPORARY HMAC BY THE END OF EACH WORKING DAY. ACCESS TO DRIVEWAYS WILL BE REQUIRED AT ALL TIMES EXCEPT WHEN CROSSING DRIVEWAY WITH THE UTILITY CONSTRUCTION.
2. AFTER UTILITIES HAVE BEEN REPLACED THE ROADWAY SHALL BE PAVED ONE-HALF AT A TIME. IF DRIVEWAYS ARE PRESENT, GRAVEL SHALL BE PLACED IN ORDER TO MAINTAIN ACCESS AT ALL TIMES. EXISTING PAVEMENT ON THE OTHER HALF SHALL REMAIN IN PLACE UNTIL THE FIRST HALF IS COMPLETE. THE PROCEDURE SHALL BE REPEATED FOR THE SECOND HALF.



2/17/2015 2:30:44 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869TC03.dgn Design PDF 2D MON EV MR 600.plt

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869TC03.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

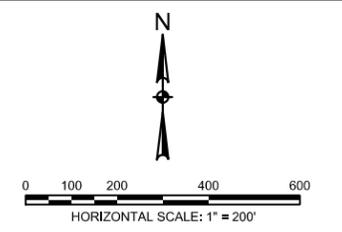
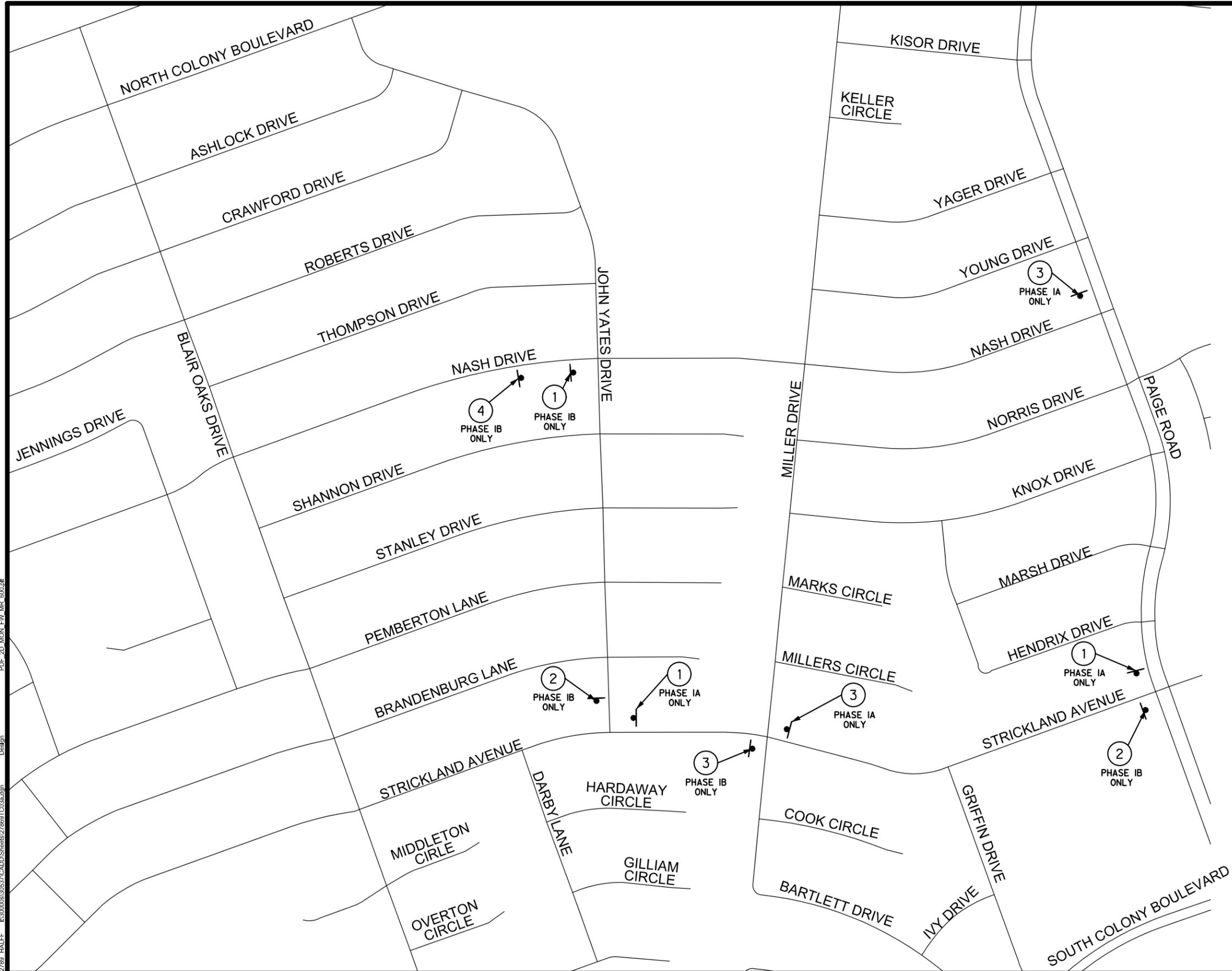


NAME: *Leigh A. Willis*
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE TRAFFIC CONTROL PLAN (SHEET 1 OF 2)
 PHASE V STREET RECONSTRUCTION

SHEET
 25
CITY BID No.
 69-11-15-PHASE V



SIGN LEGEND

- ① M4-9N
DETOUR
M4-9R
- ② M4-9N
DETOUR
M4-9L
- ③ M4-9N
DETOUR
M4-9
- ④ DETOUR
AHEAD
CW20-2D

2/17/2015 2:30:50 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869TC03a.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869TC03a.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



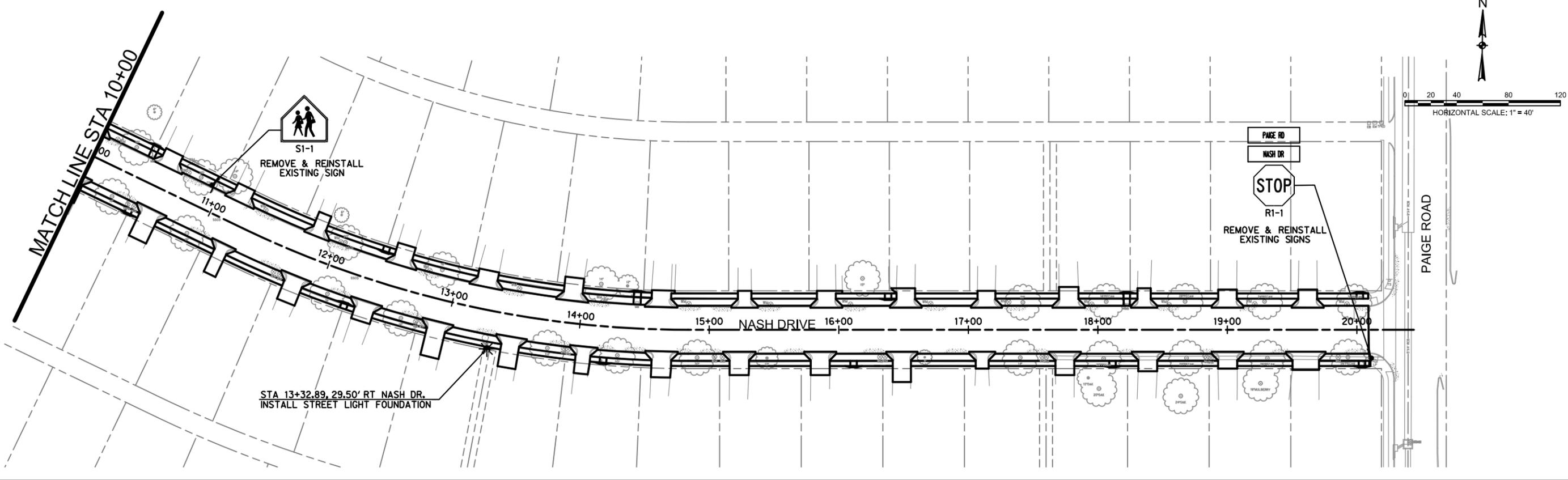
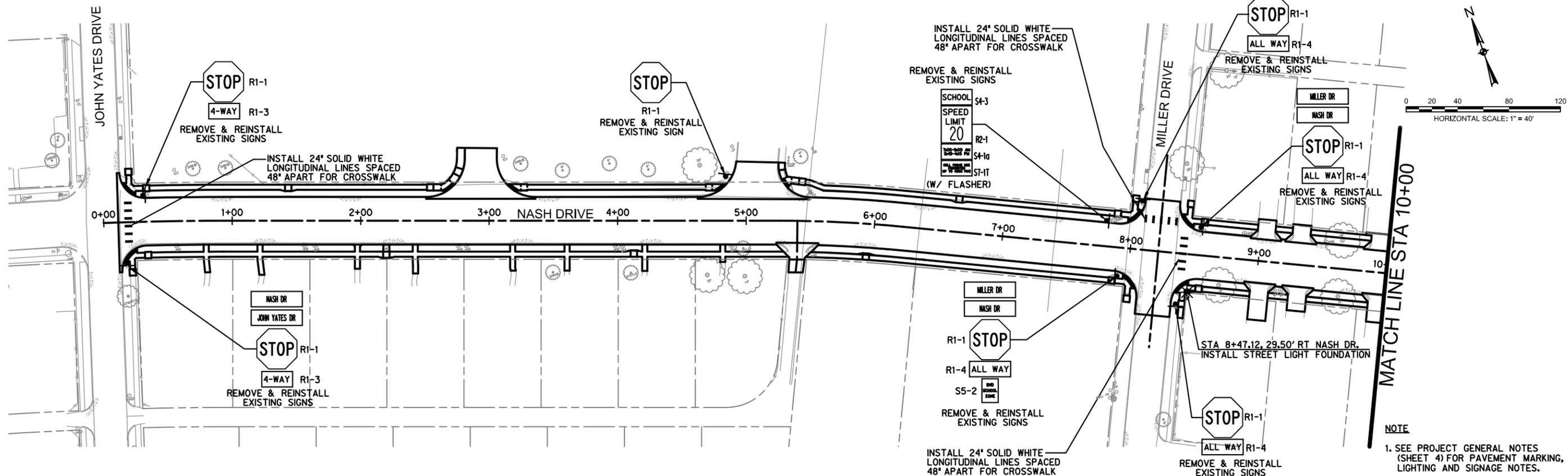
Leigh A. Hollis
NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312



NASH DRIVE
TRAFFIC CONTROL PLAN
(SHEET 2 OF 2)
PHASE V STREET
RECONSTRUCTION

SHEET
26
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:30:54 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PMKS03.dgn Design R:\30000s\30537\CADD\Sheets\27869PMKS03.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PMKS03.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



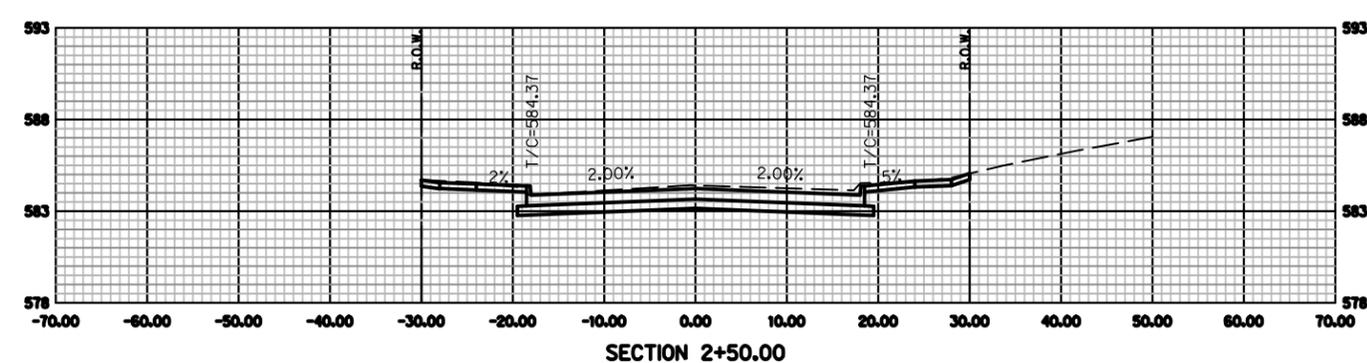
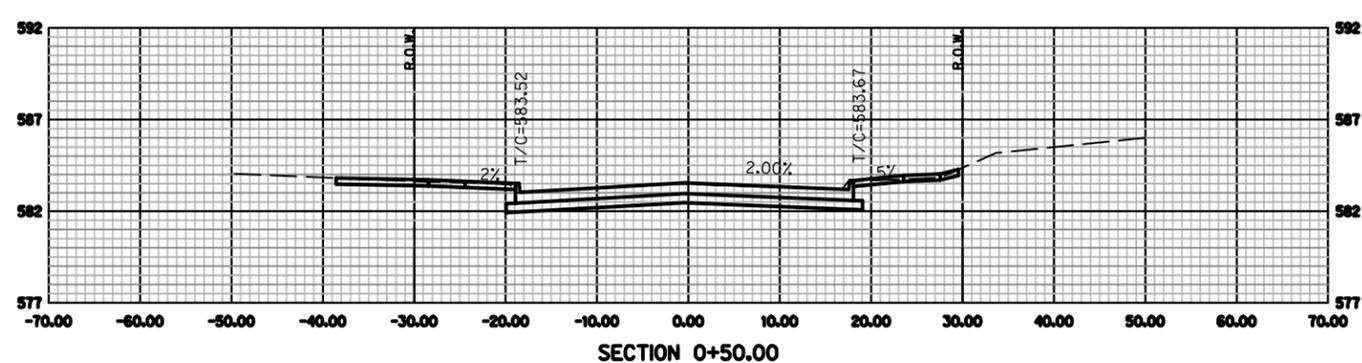
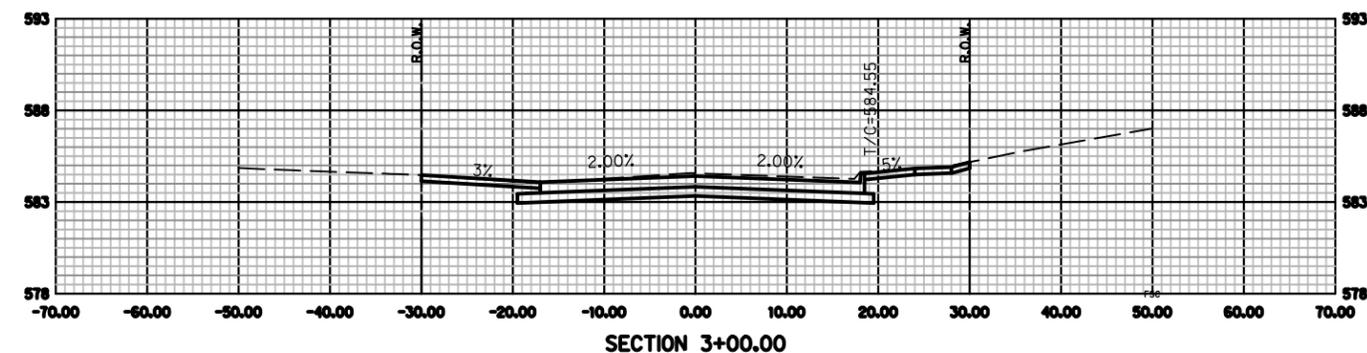
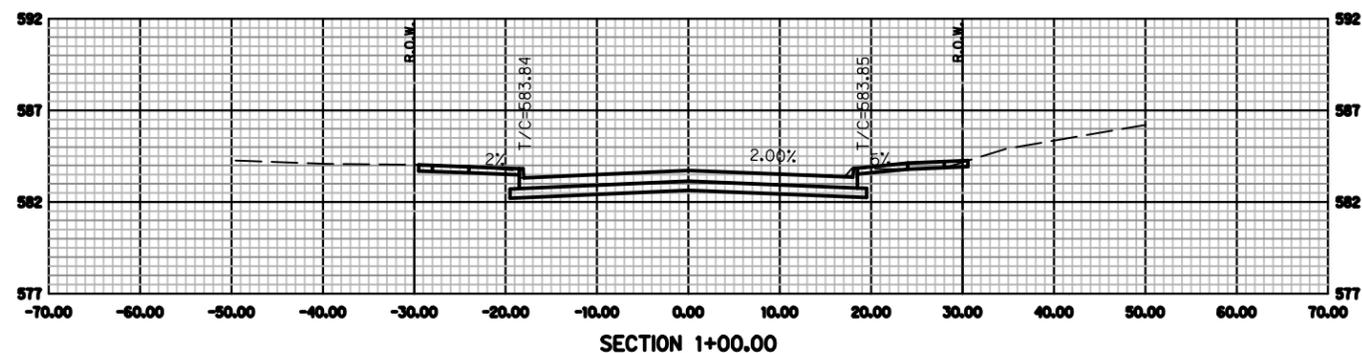
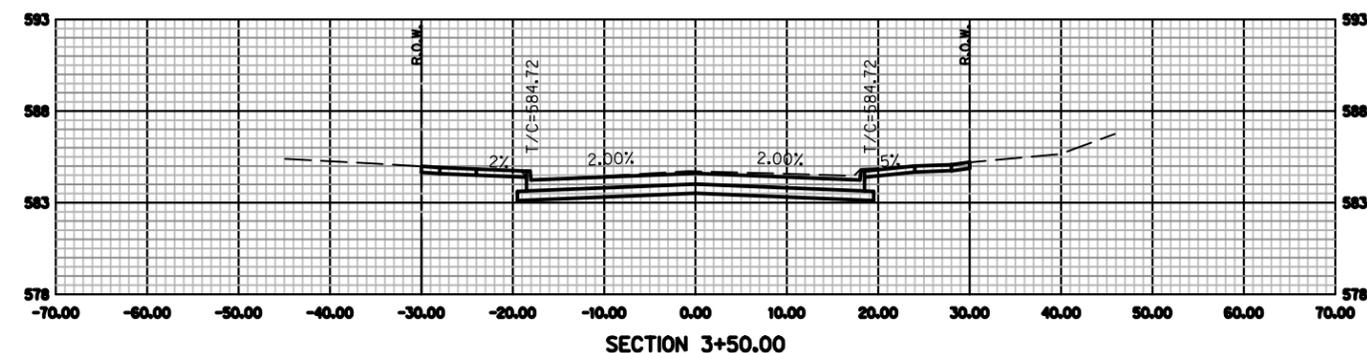
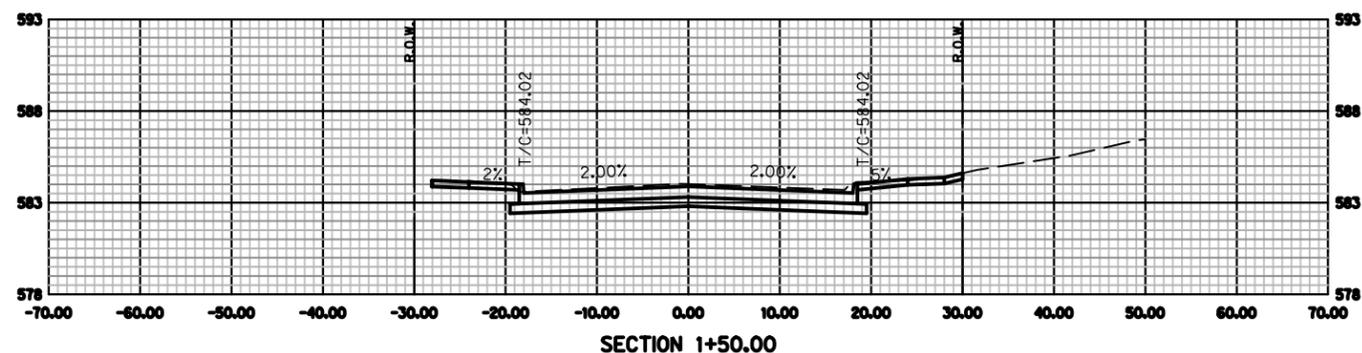
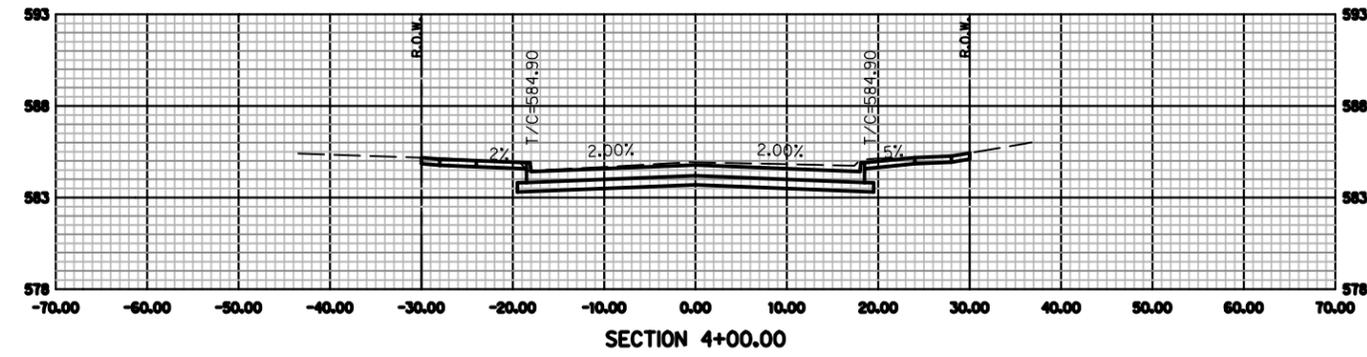
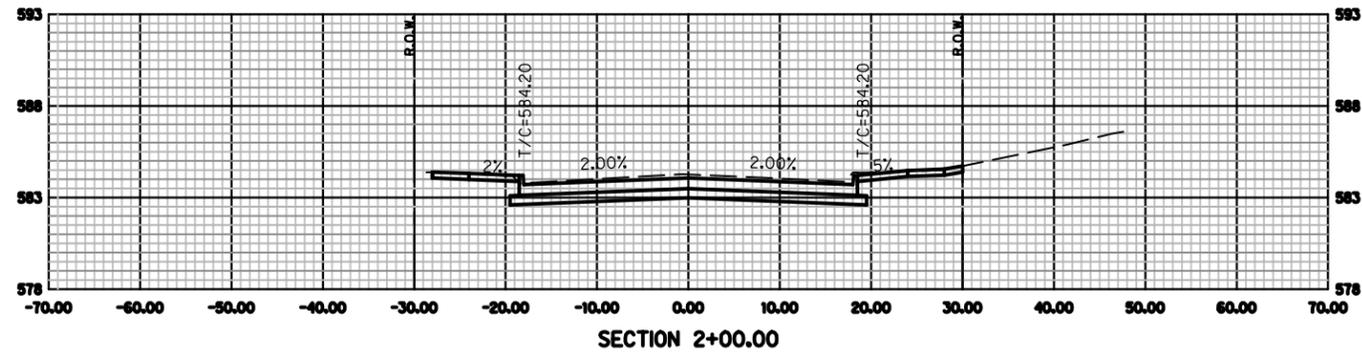
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE
 PAVEMENT MARKINGS, LIGHTING, AND
 SIGNAGE PLAN
 PHASE V STREET
 RECONSTRUCTION

SHEET
 27
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:30:56 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD20.dgn Design PDF 2D MON FV MR 600.plt

NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	



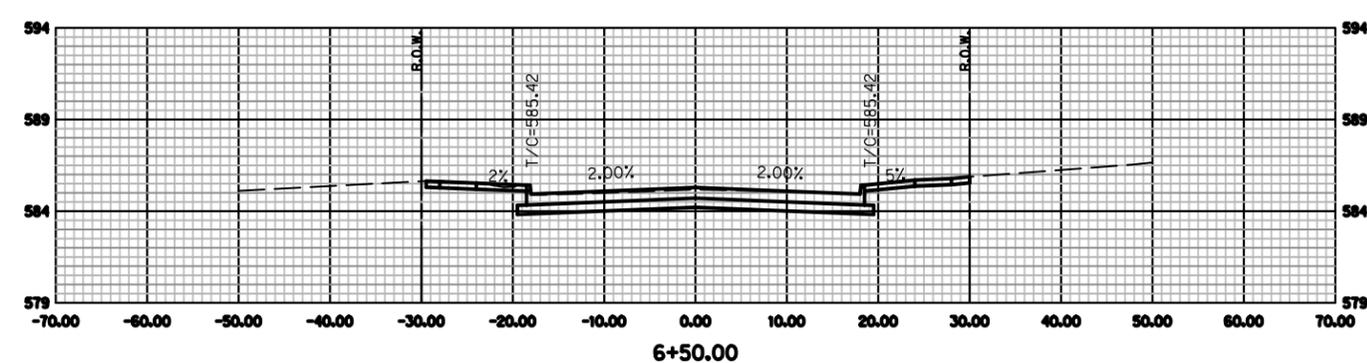
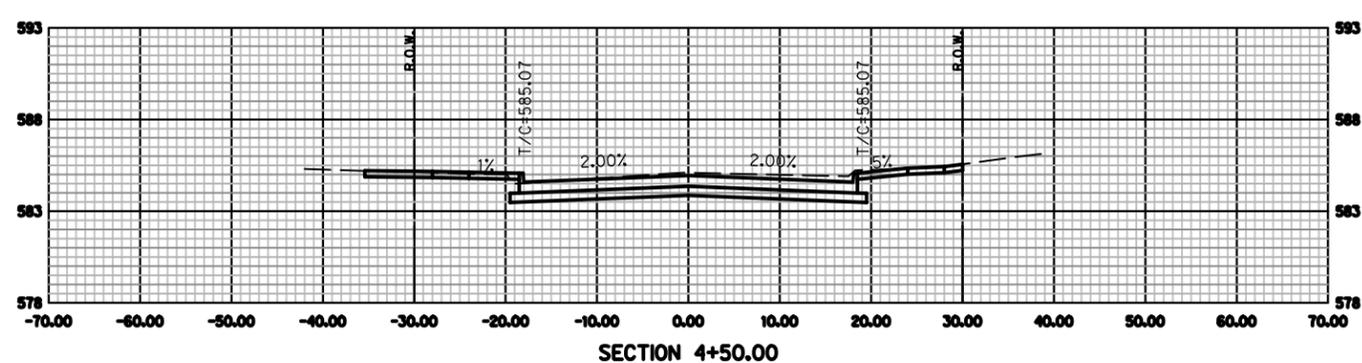
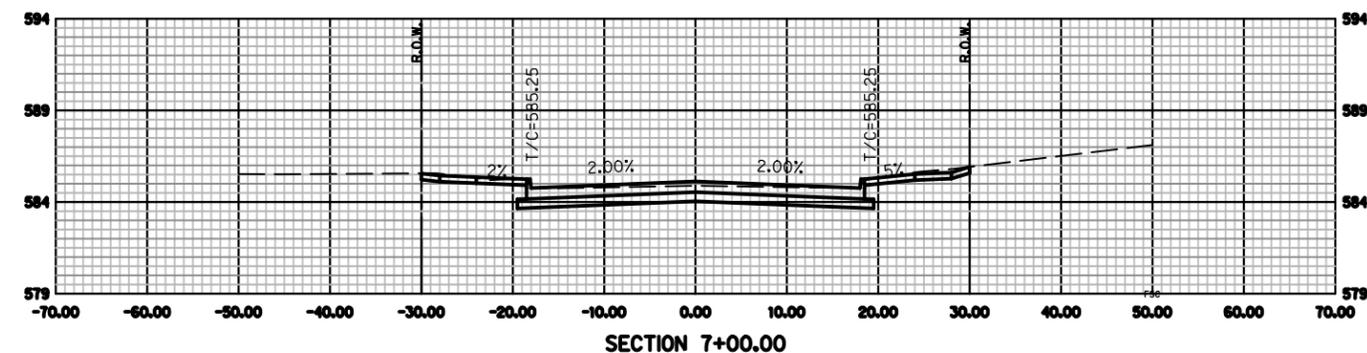
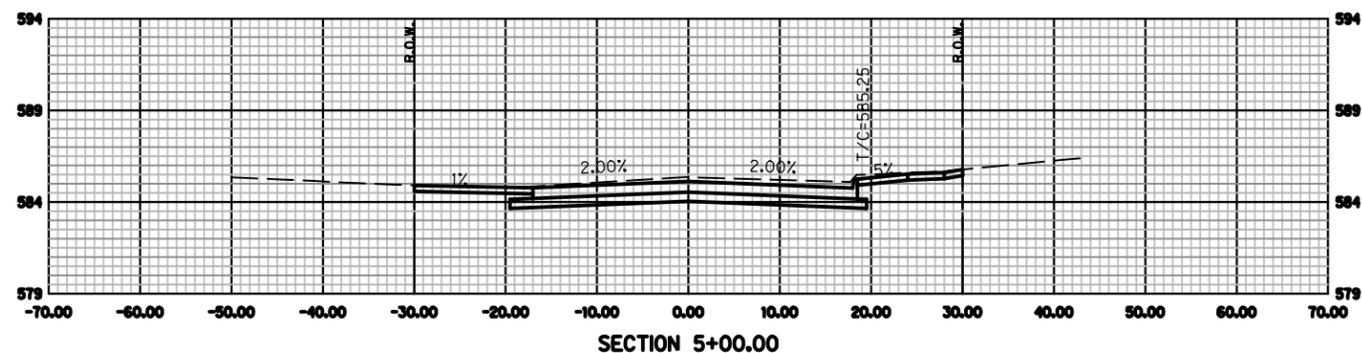
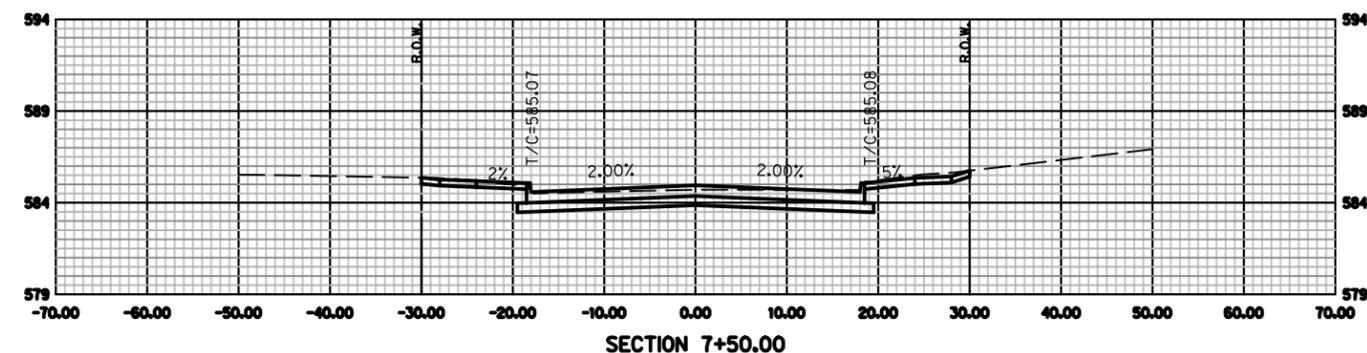
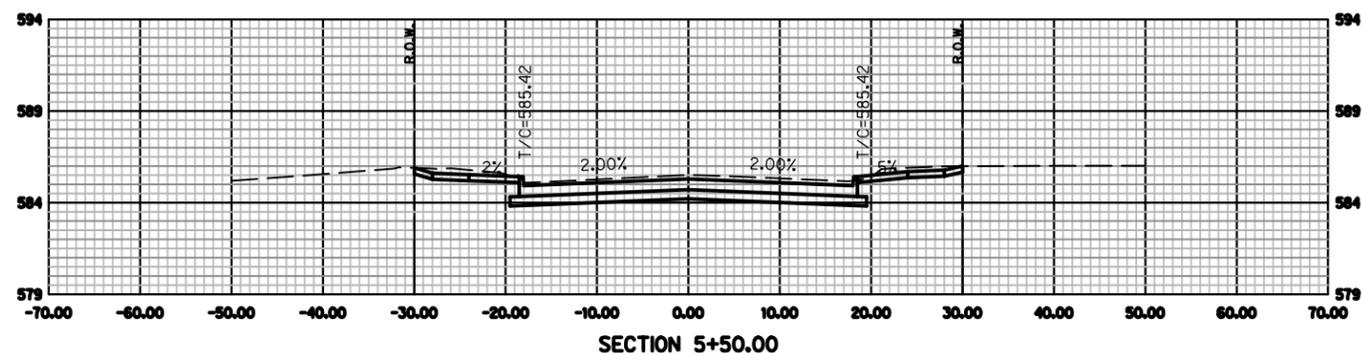
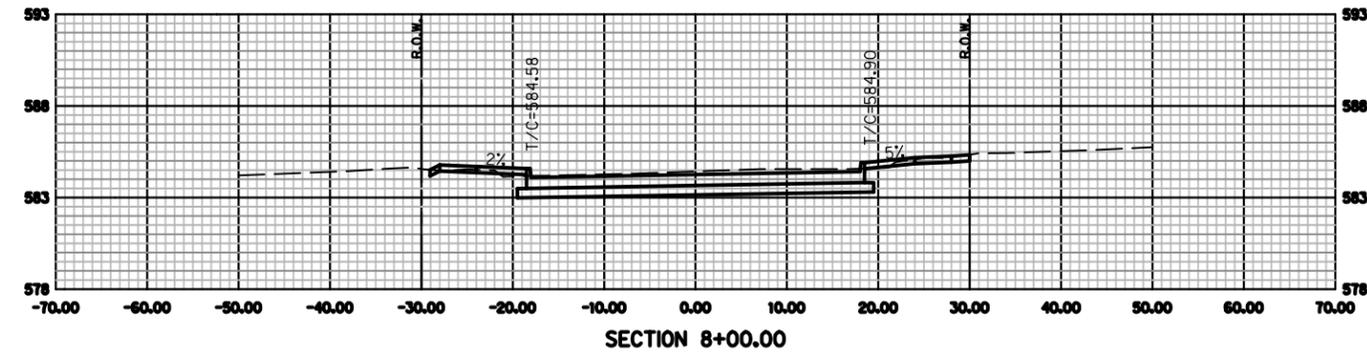
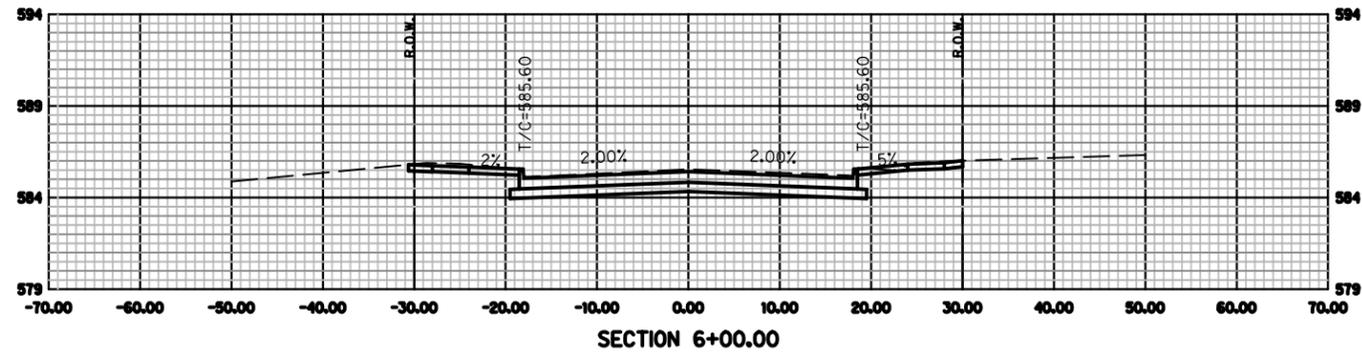
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



NASH DRIVE
 CROSS SECTIONS
 STA 0+50.00 TO STA 4+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 28
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:30:58 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\7869XSRD21.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD21.dgn
CADD DRAWN	
B.L.M. CHECKED	



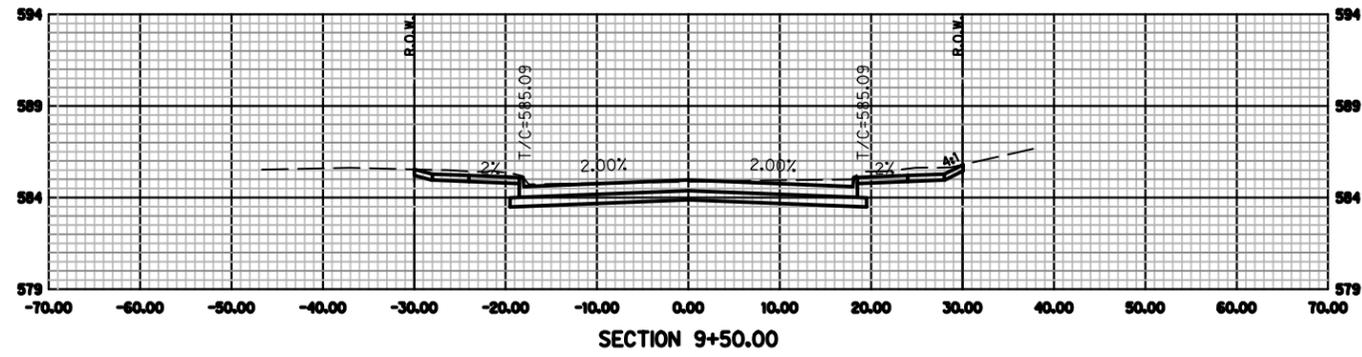
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



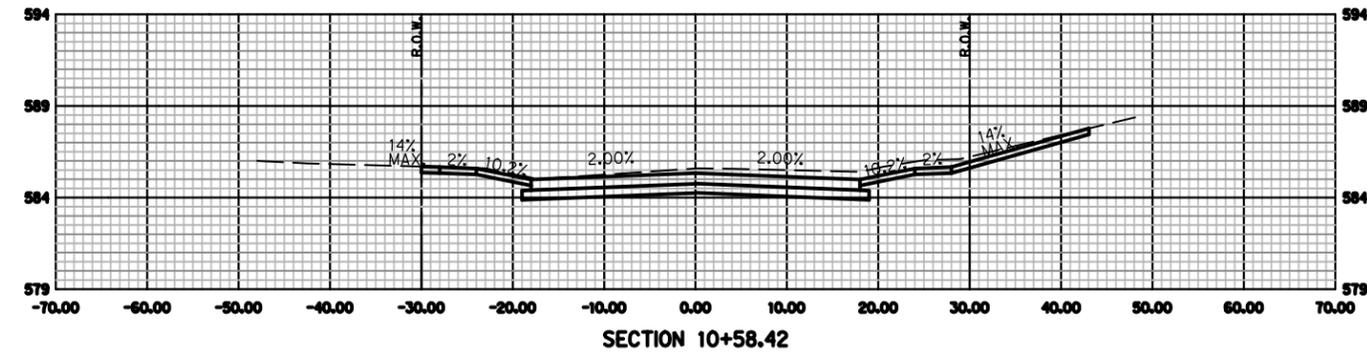
NASH DRIVE
 CROSS SECTIONS
 STA 4+50.00 TO STA 8+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 29
CITY BID No.
 69-11-15-PHASE V

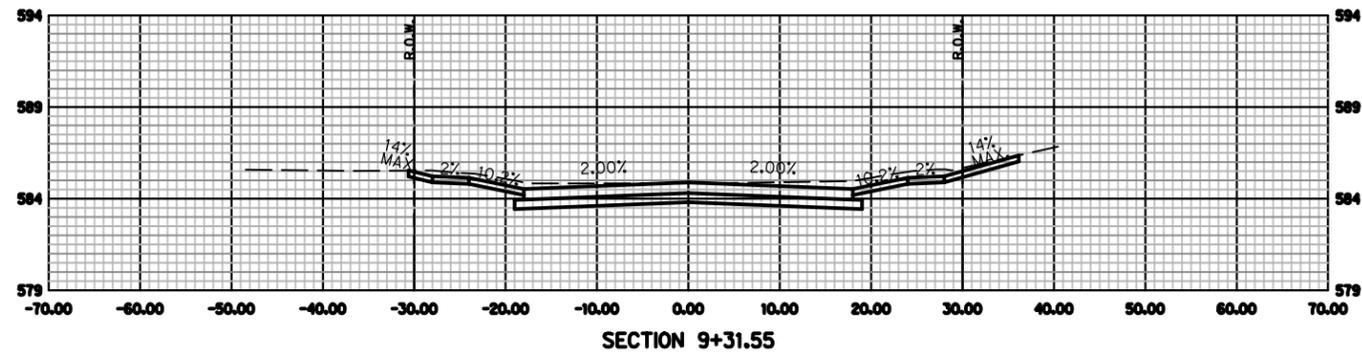
PHASE IV STREET RECONSTRUCTION



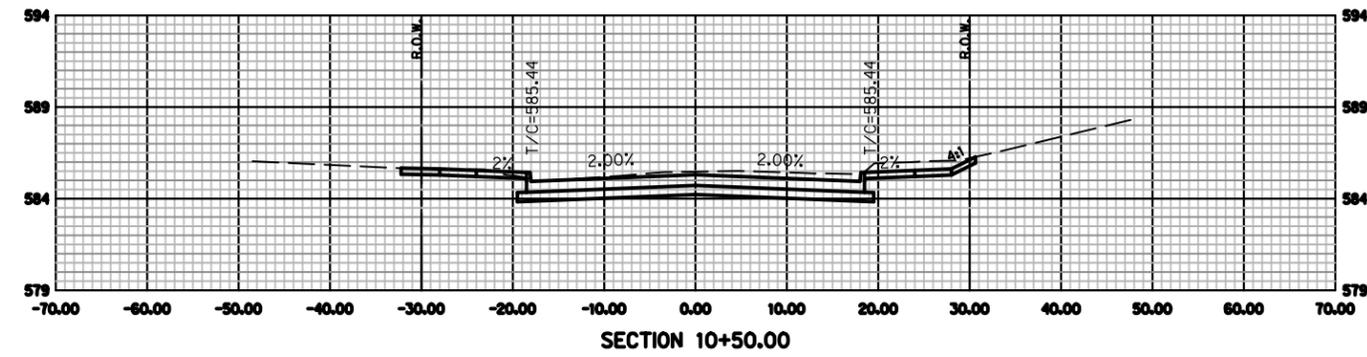
SECTION 9+50.00



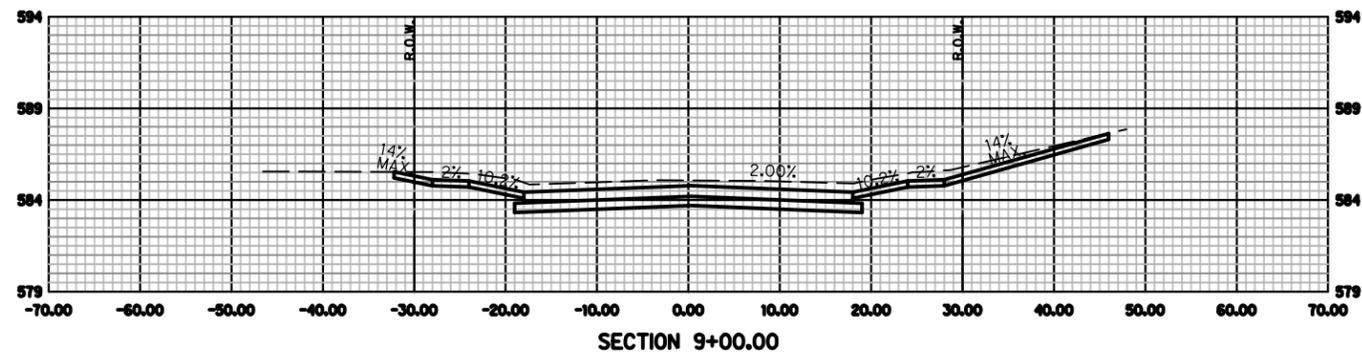
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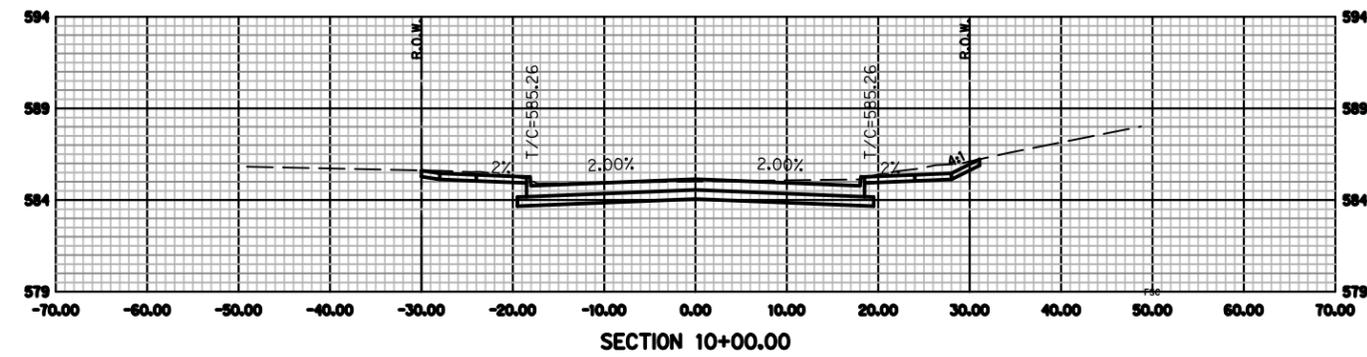
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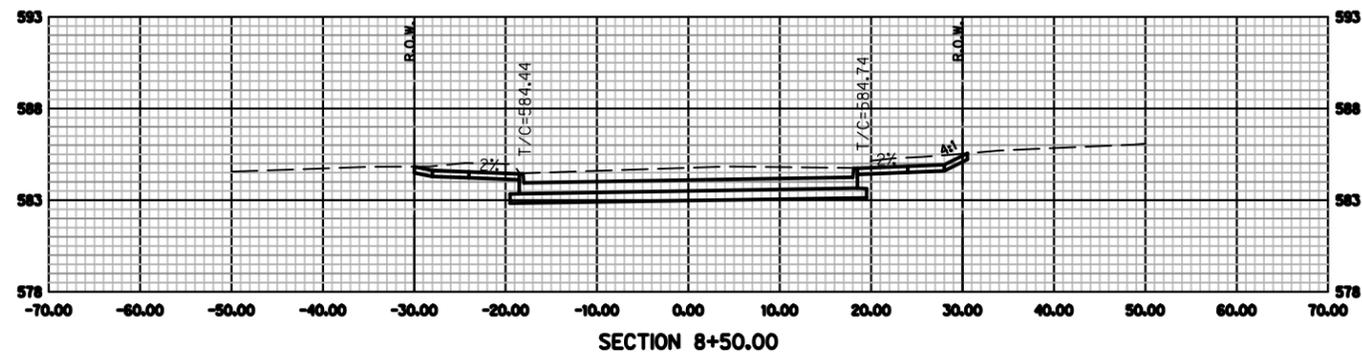
SECTION 10+50.00



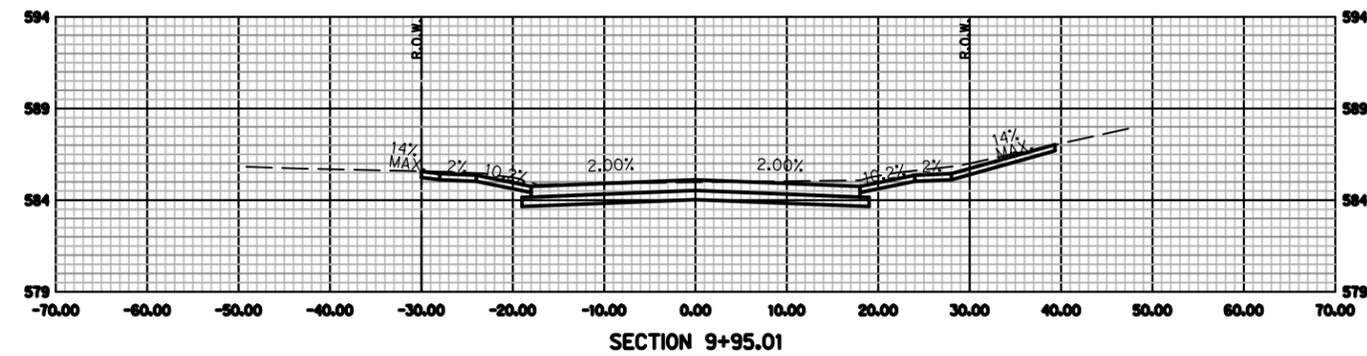
SECTION 9+00.00



SECTION 10+00.00



SECTION 8+50.00



SECTION 9+95.01

2/17/2015 2:30:59 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869XSRD22.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVQ: 30537 FILE: 27869XSRD22.dgn
CADD DRAWN	
B.L.M. CHECKED	



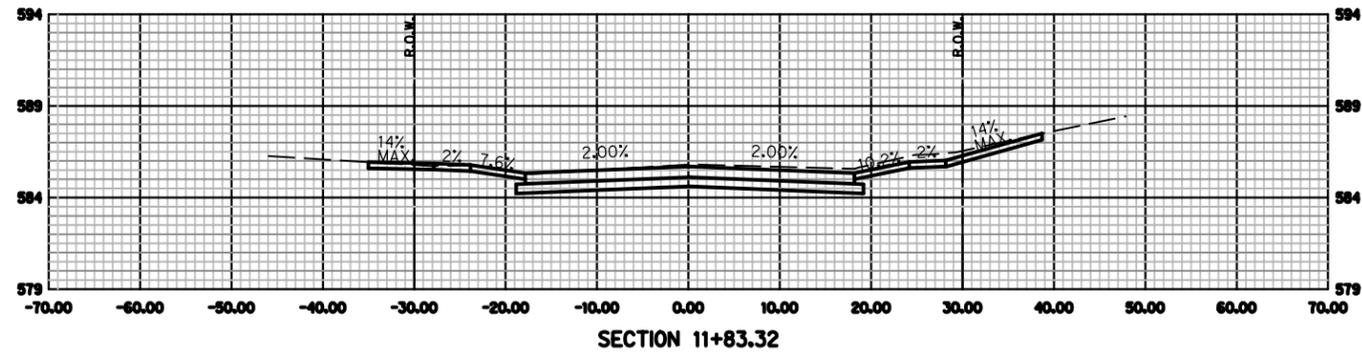
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



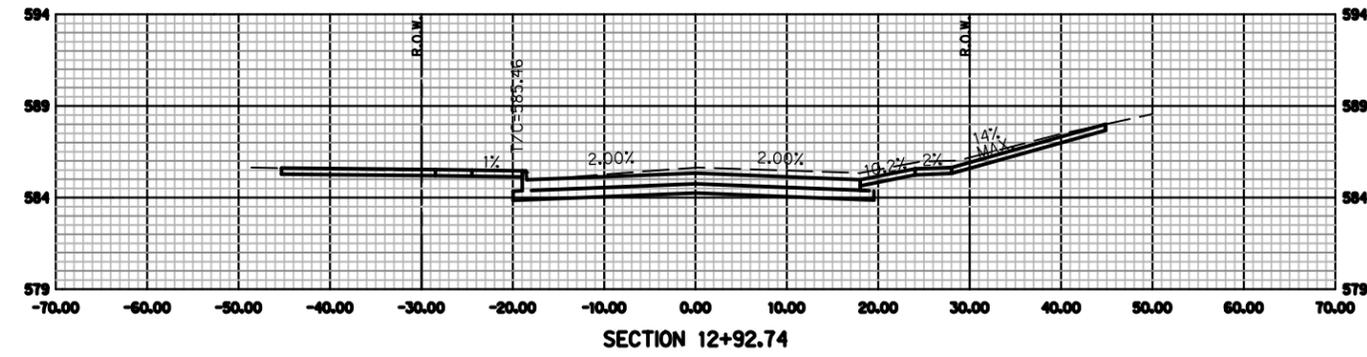
NASH DRIVE
 CROSS SECTIONS
 STA 8+50.00 TO STA 10+58.42
 PHASE V STREET
 RECONSTRUCTION

SHEET
 30
CITY BID No.
 69-11-15-PHASE V

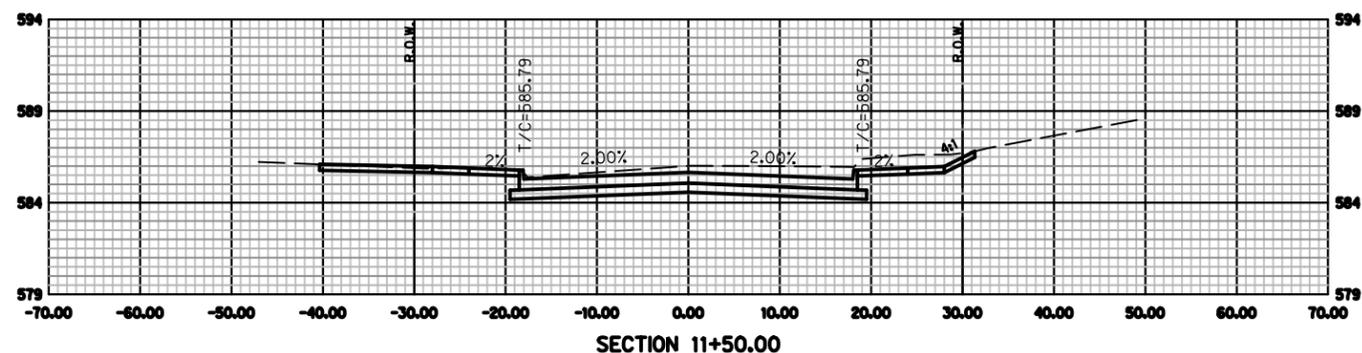
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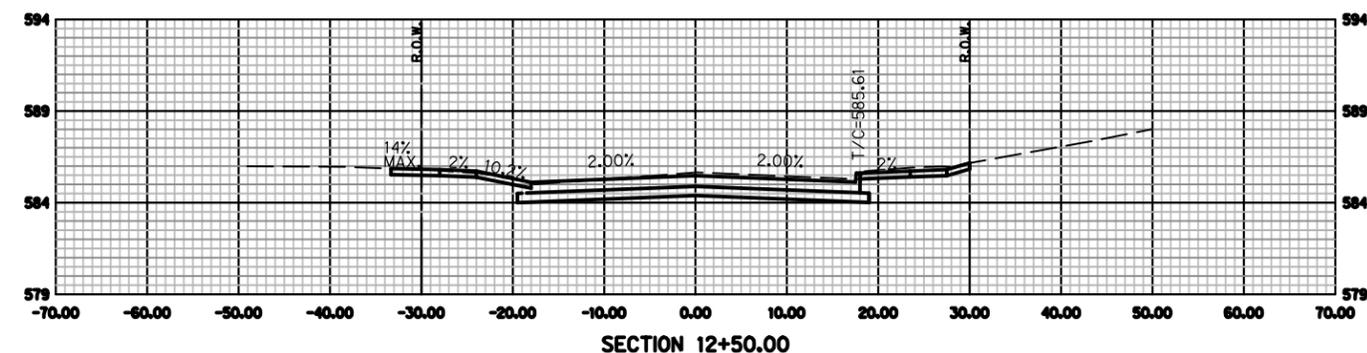
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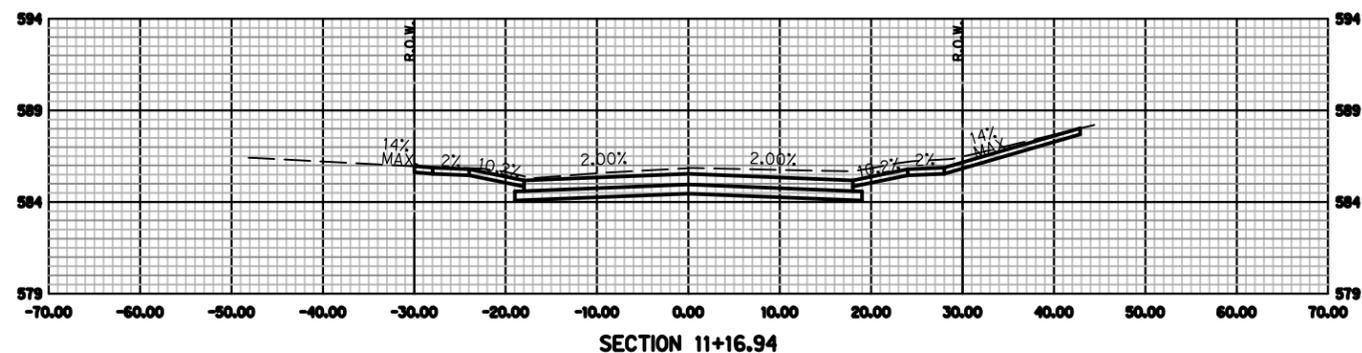
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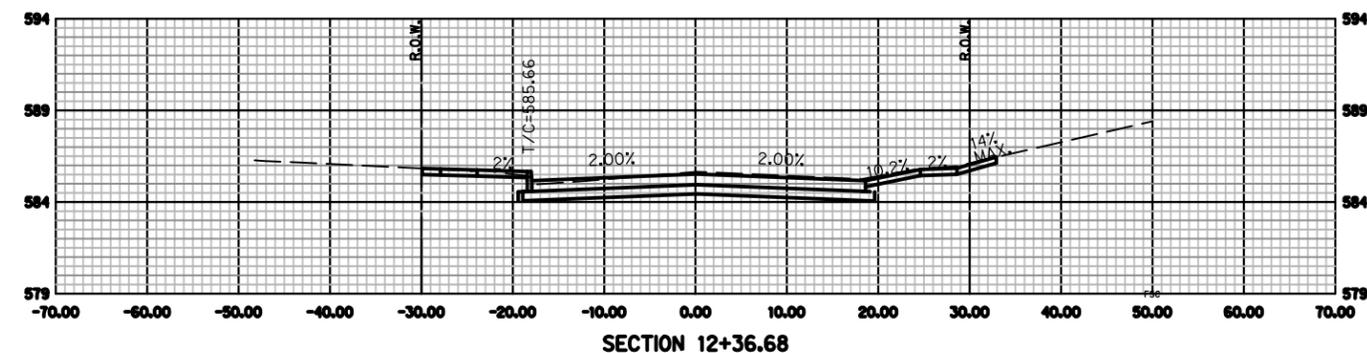
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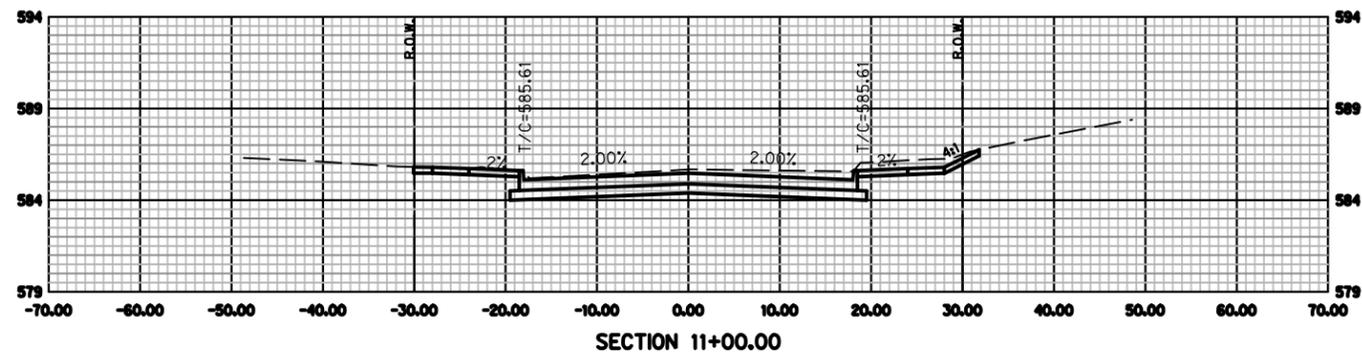
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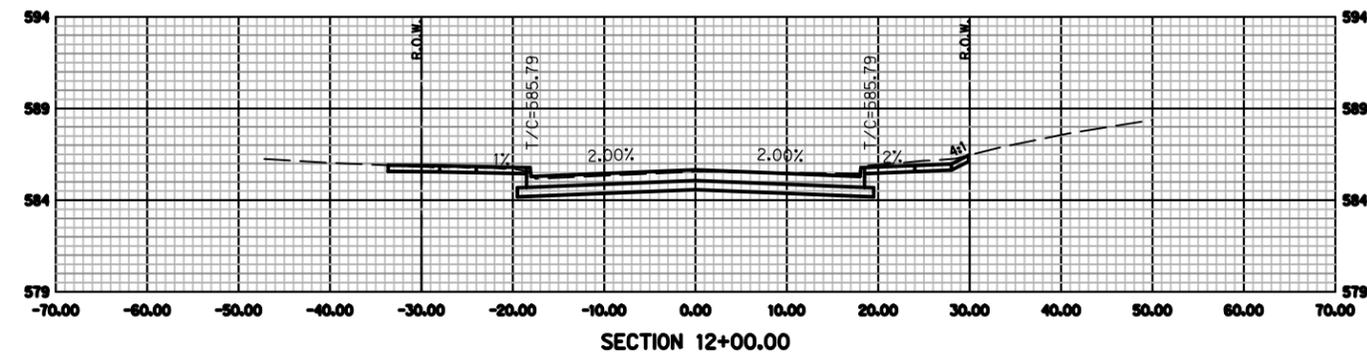
SECTION 11+16.94



SECTION 12+36.68



SECTION 11+00.00



SECTION 12+00.00

2/17/2015 2:31:01 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD23.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD23.dgn
CADD DRAWN	
B.L.M. CHECKED	



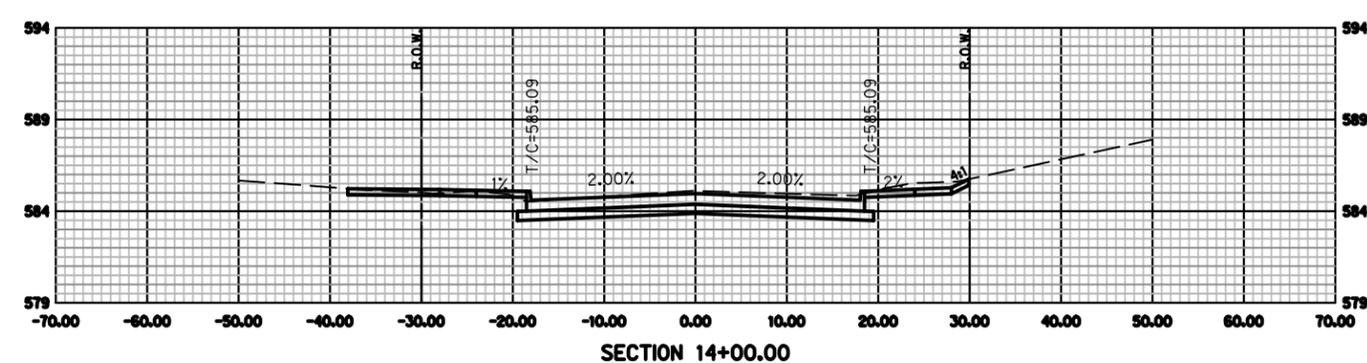
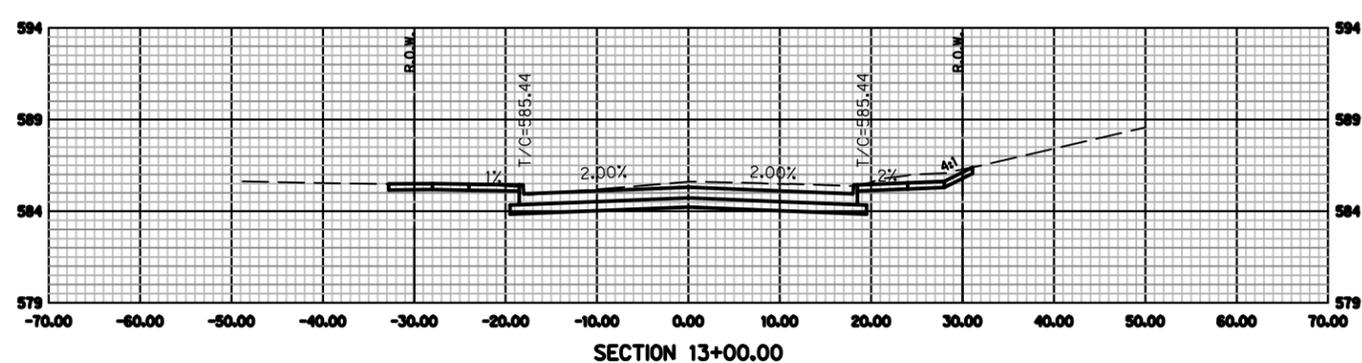
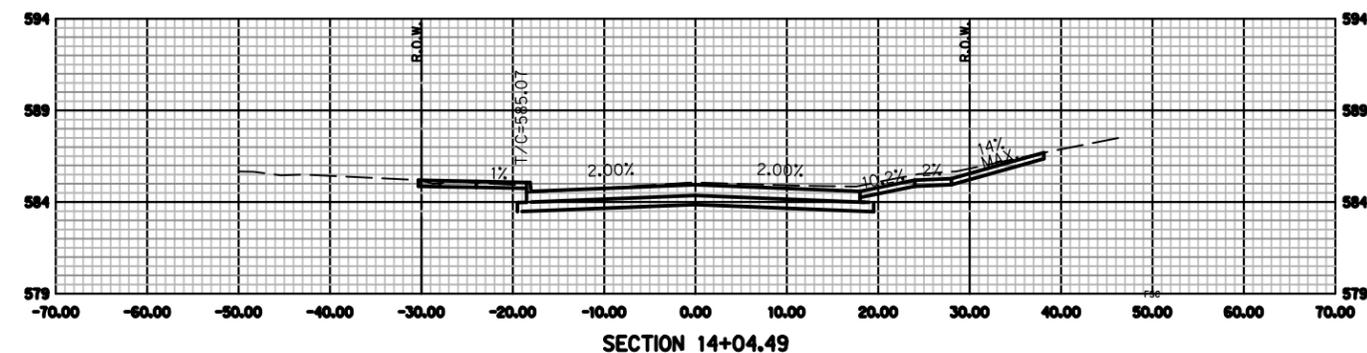
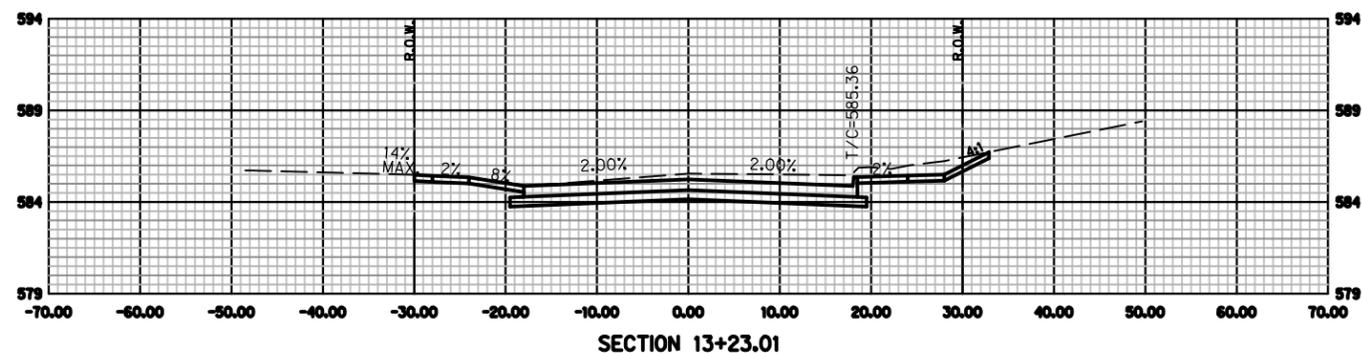
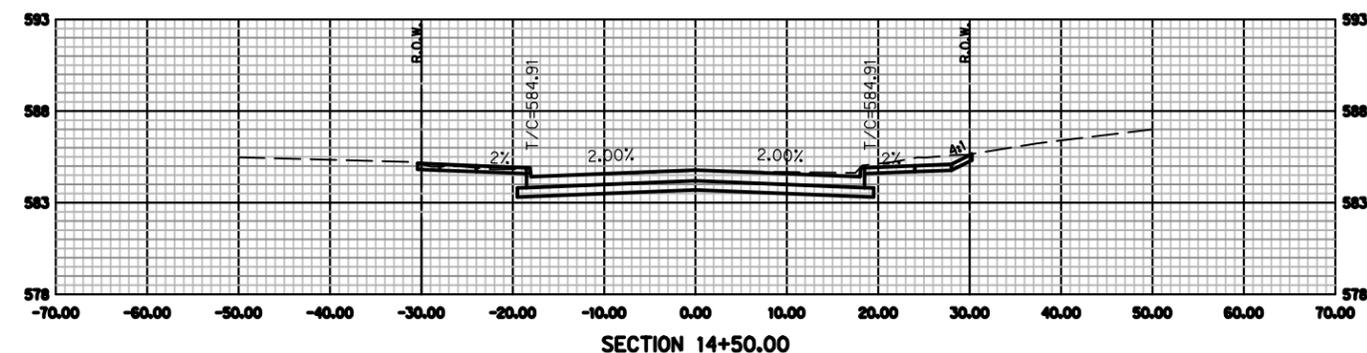
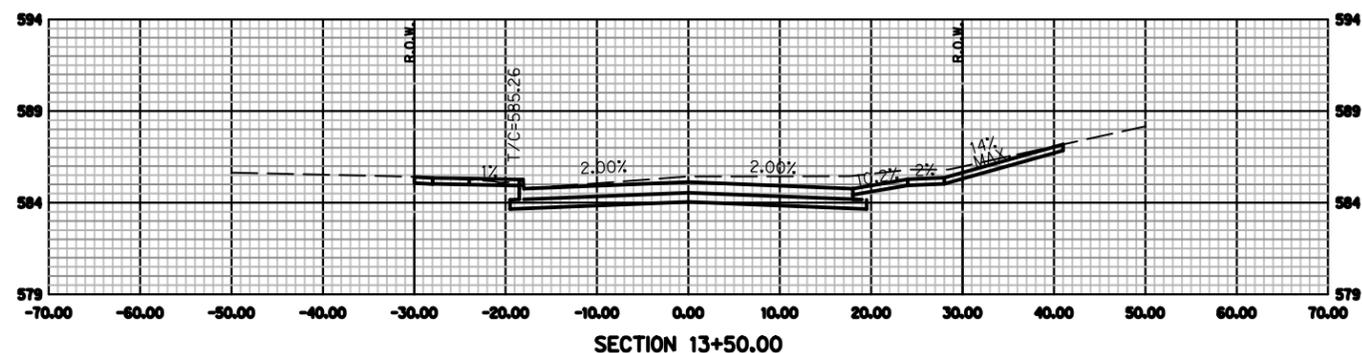
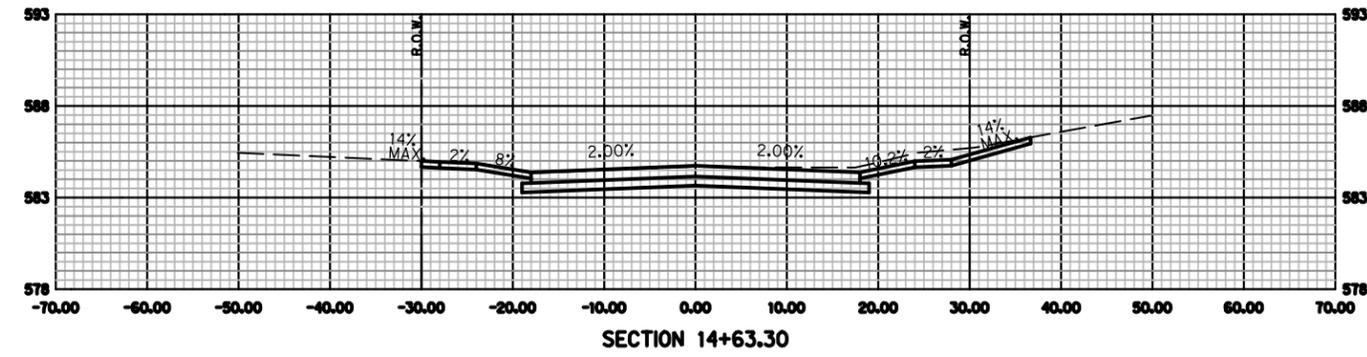
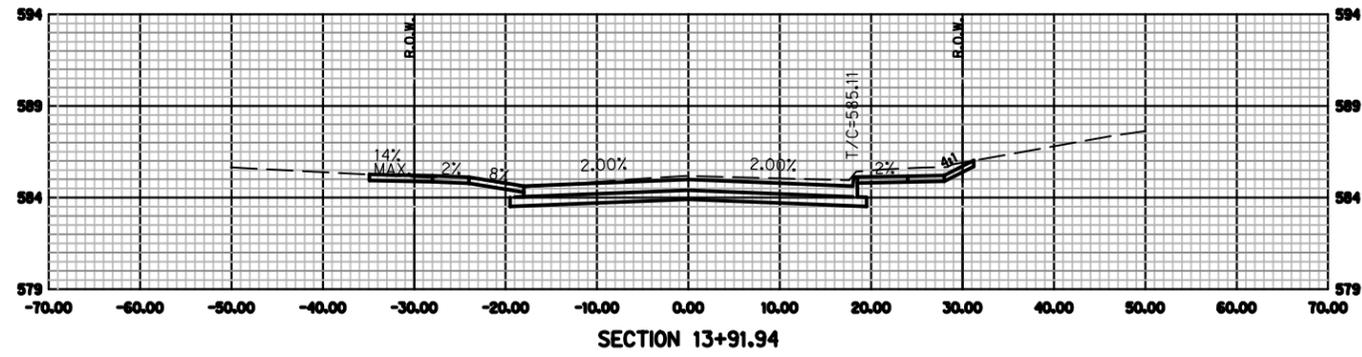
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE
 CROSS SECTIONS
 STA 11+00.00 TO STA 12+92.74
 PHASE V STREET
 RECONSTRUCTION

SHEET
 31
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:31:03 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD24.dgn Design

NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	



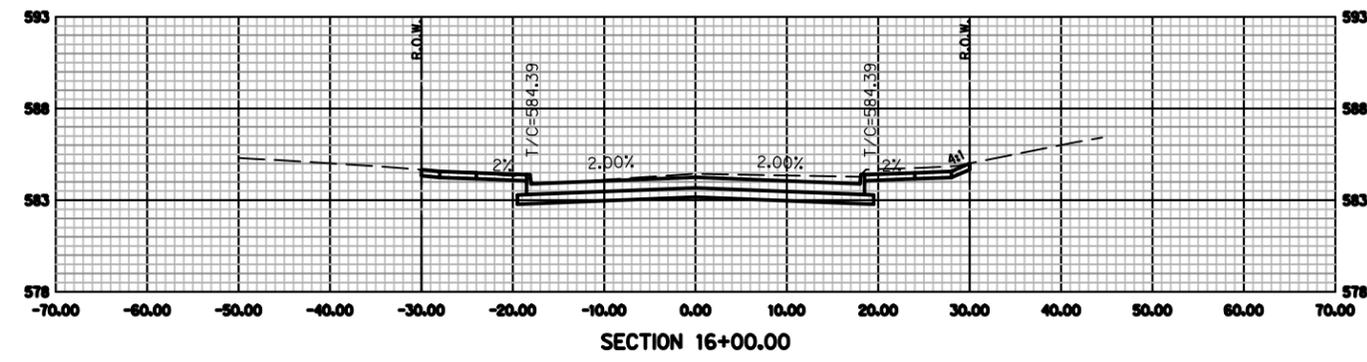
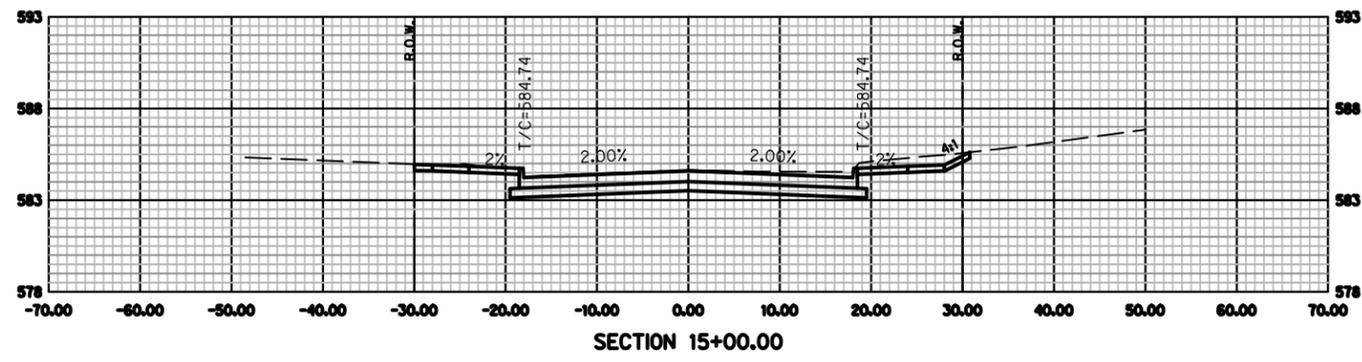
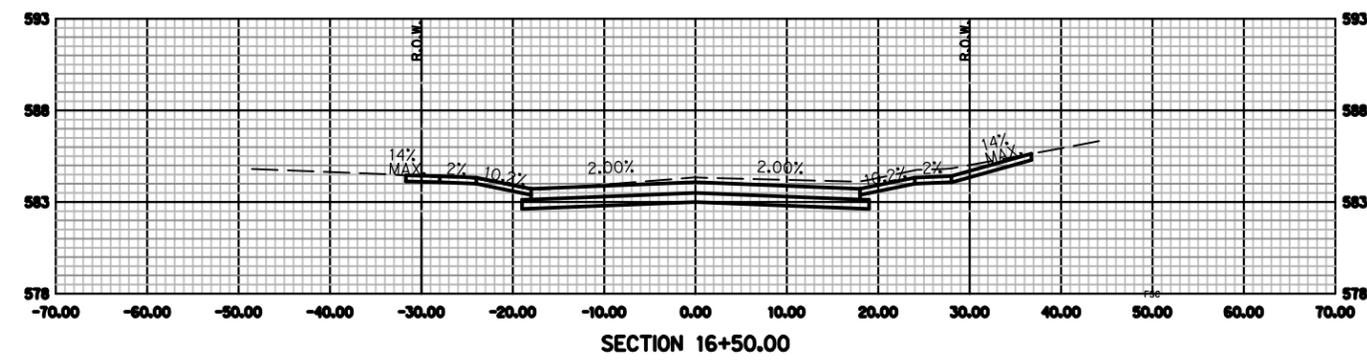
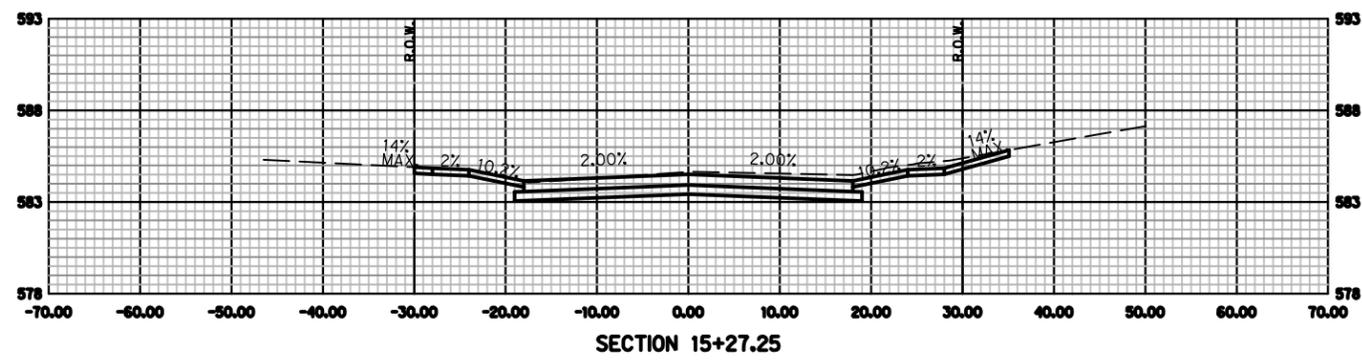
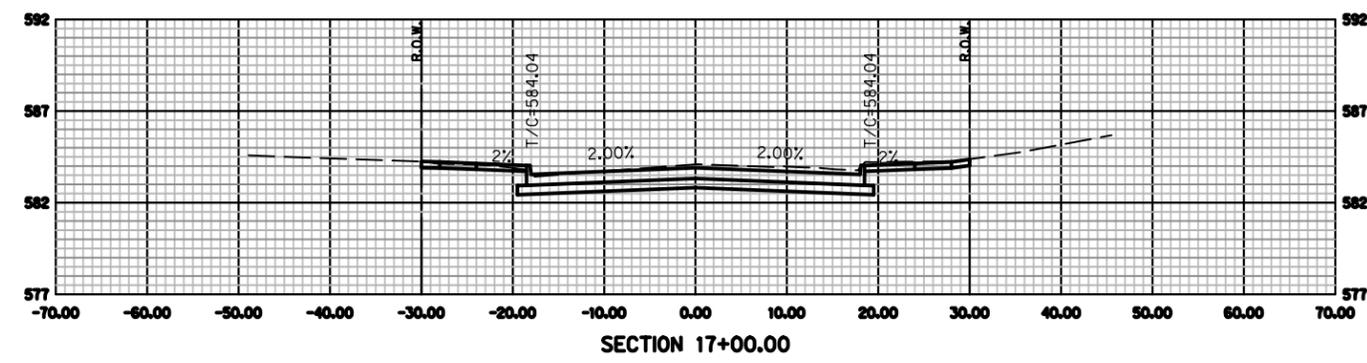
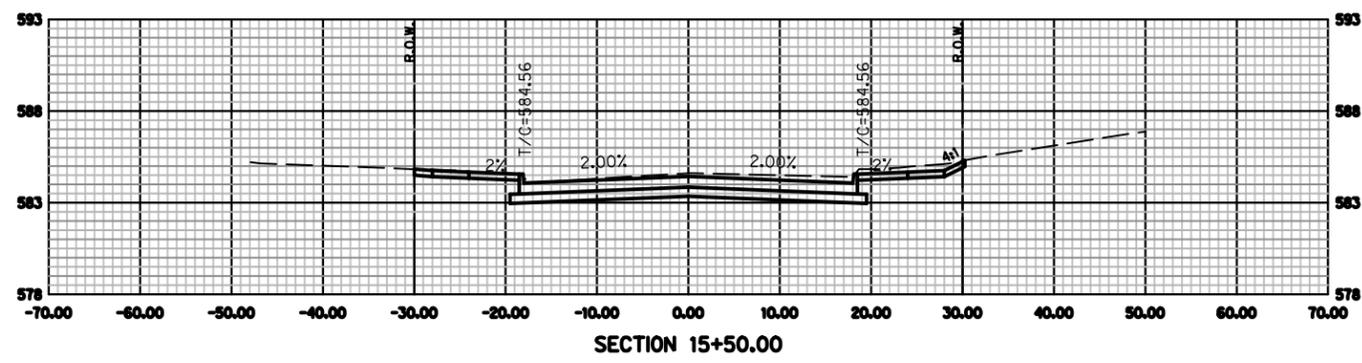
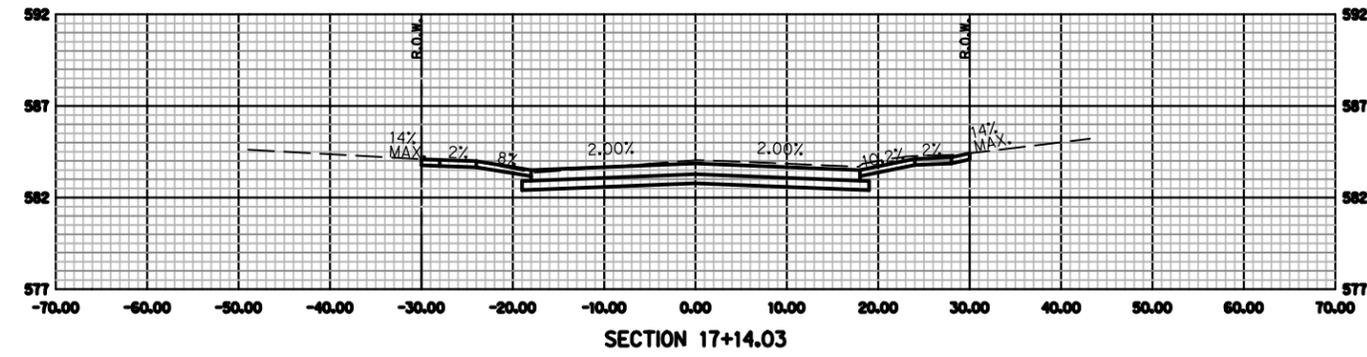
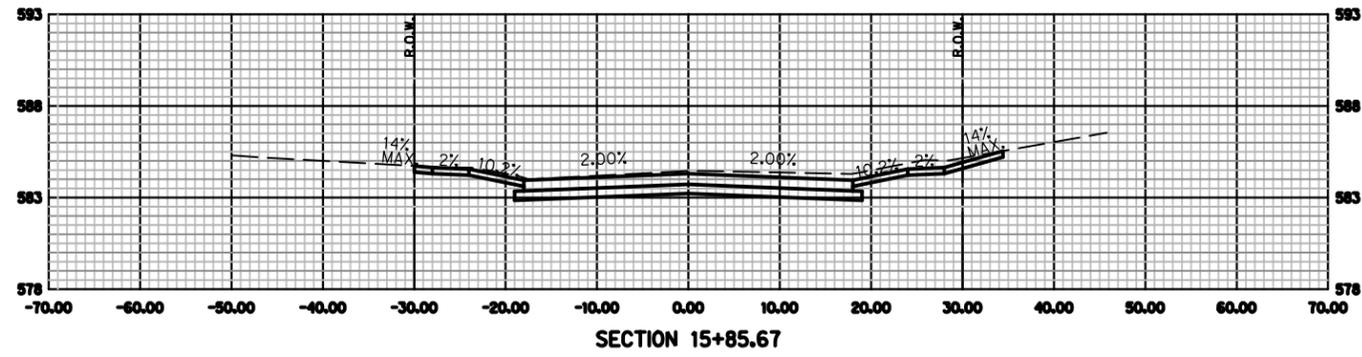
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE
 CROSS SECTIONS
 STA 13+00.00 TO STA 14+63.30
 PHASE V STREET
 RECONSTRUCTION

SHEET
 32
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:31:05 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD25.dgn Design

NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	



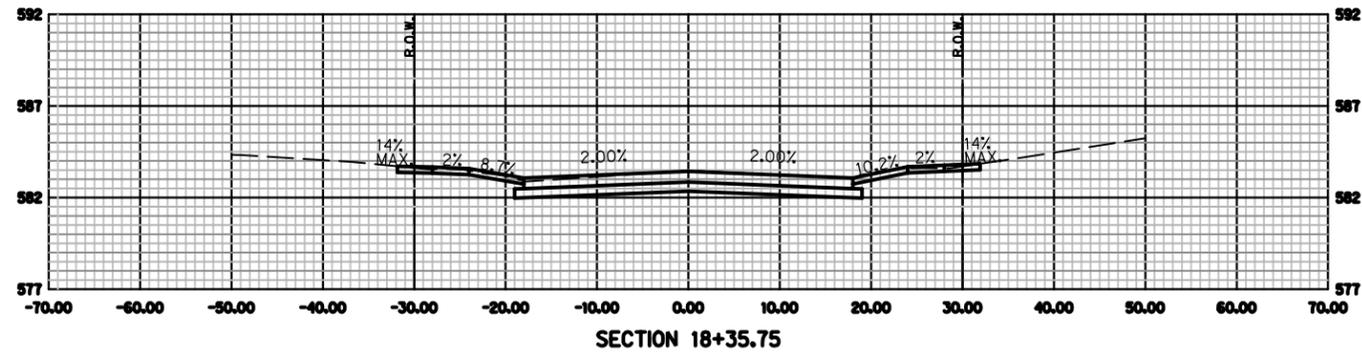
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



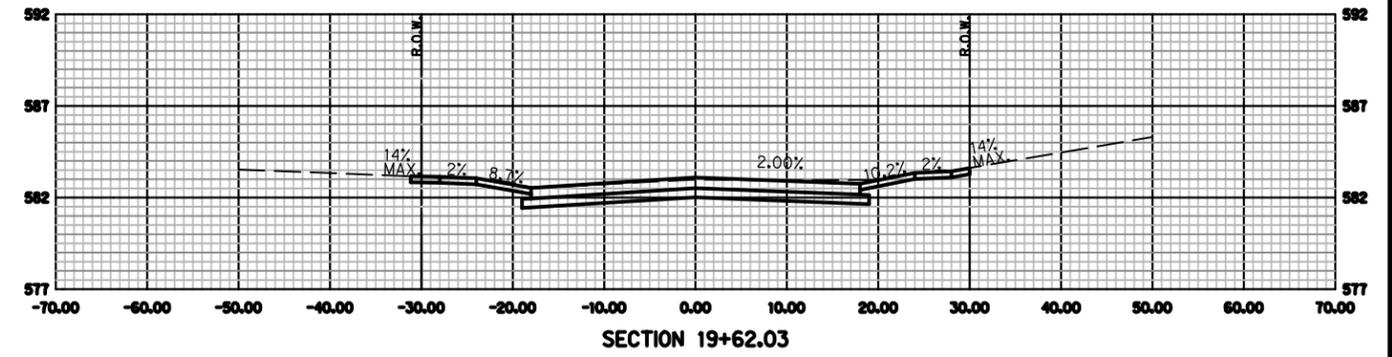
NASH DRIVE
 CROSS SECTIONS
 STA 15+00.00 TO STA 17+14.03
 PHASE V STREET
 RECONSTRUCTION

SHEET
 33
CITY BID No.
 69-11-15-PHASE V

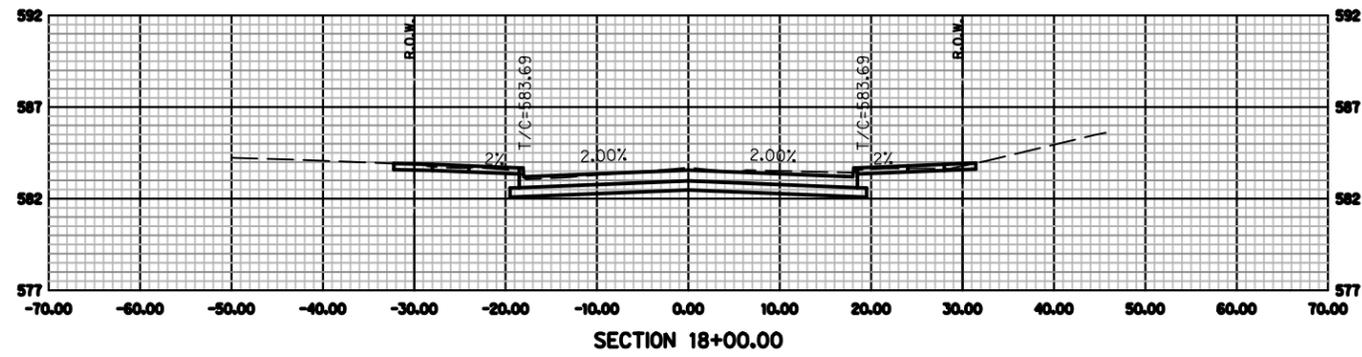
PHASE IV STREET RECONSTRUCTION



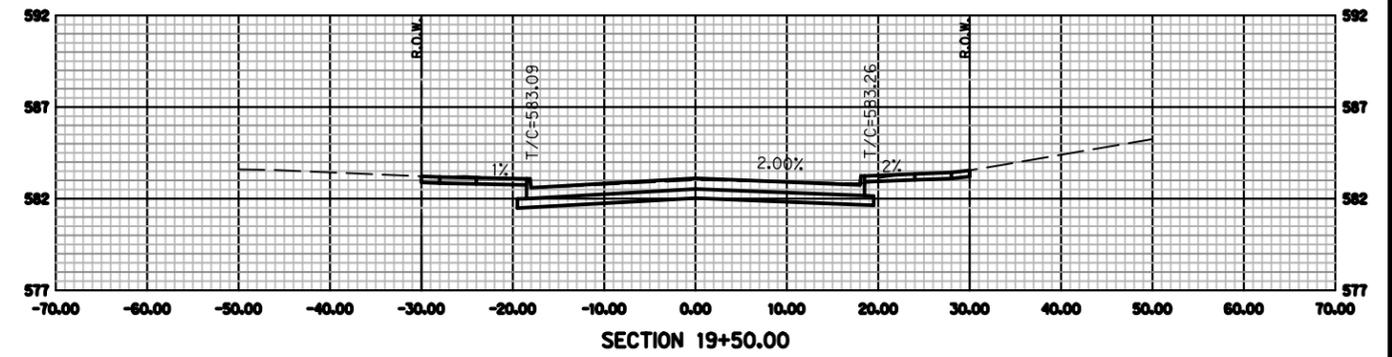
SECTION 18+35.75



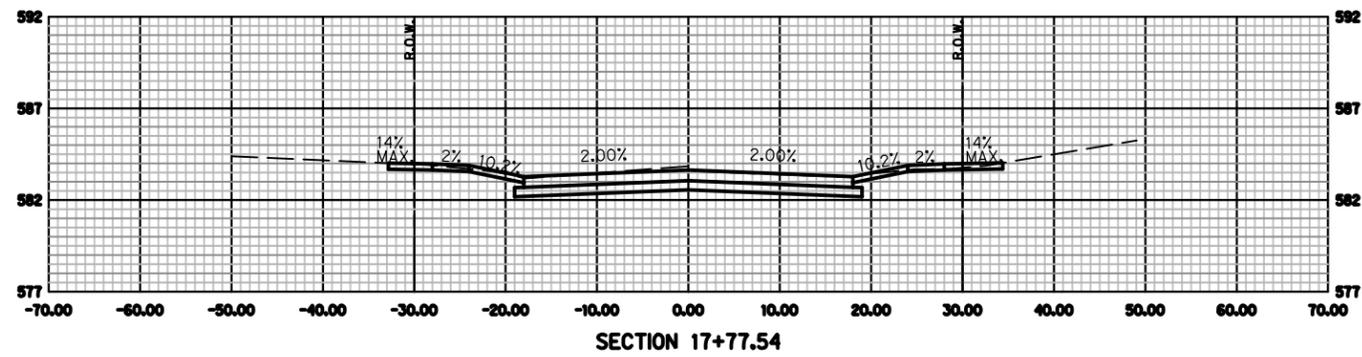
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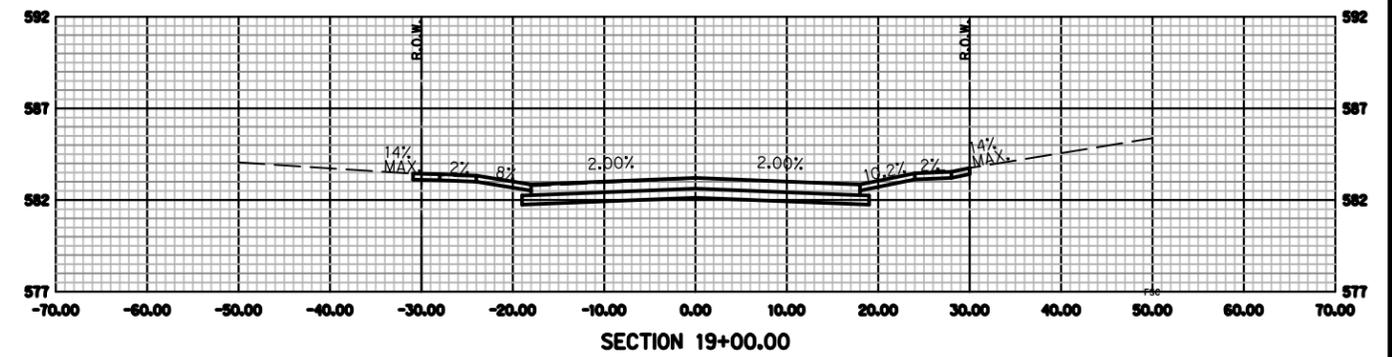
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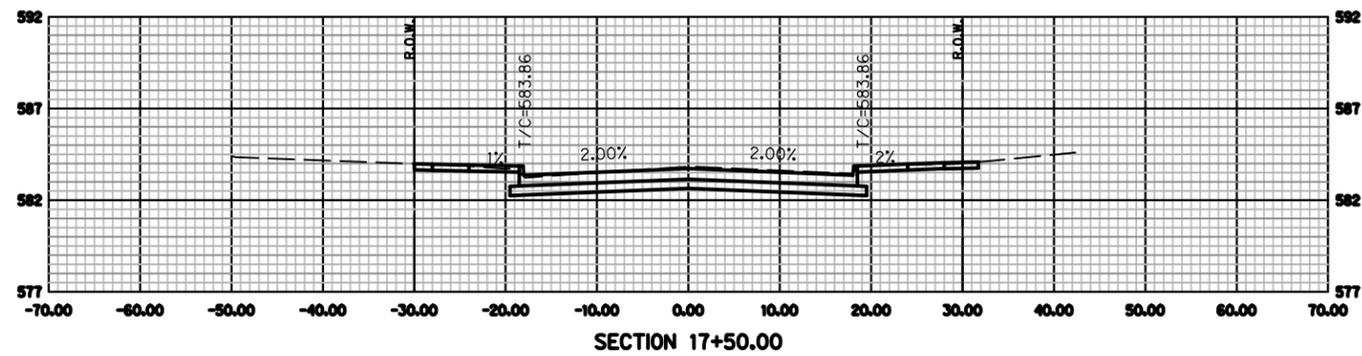
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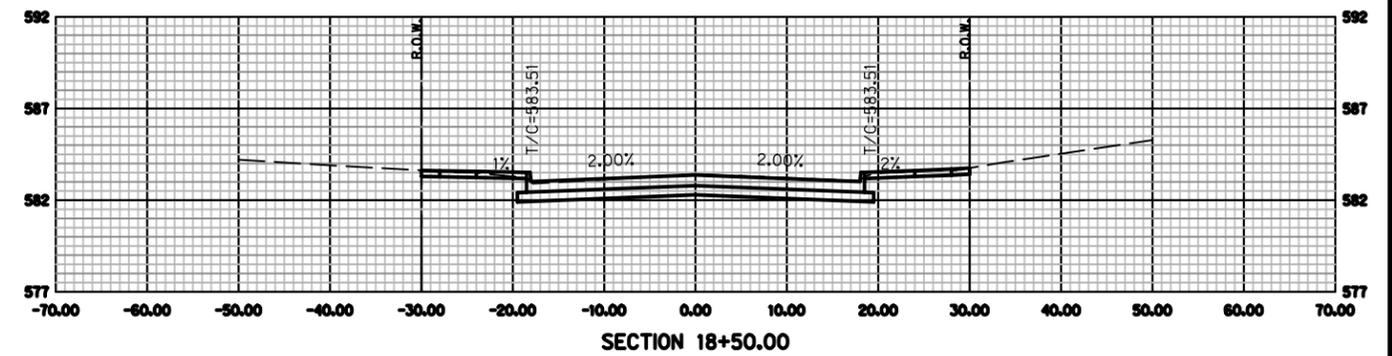
SECTION 17+77.54



SECTION 19+00.00



SECTION 17+50.00



SECTION 18+50.00

2/17/2015 2:31:07 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD26.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD26.dgn
CADD DRAWN	
B.L.M. CHECKED	



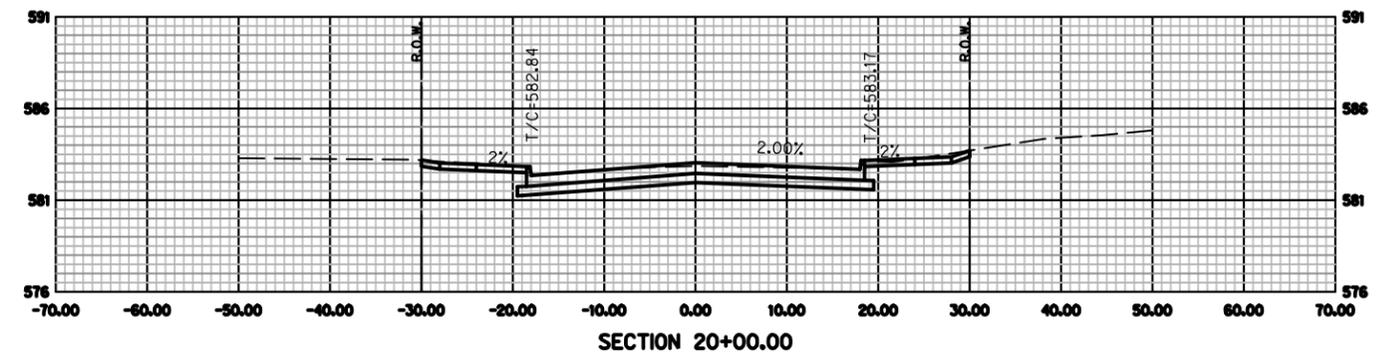
NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



NASH DRIVE
 CROSS SECTIONS
 STA 17+50.00 TO STA 19+62.03
 PHASE V STREET
 RECONSTRUCTION

SHEET
 34
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD27.dgn
CADD DRAWN	
B.L.M.	
CHECKED	



FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

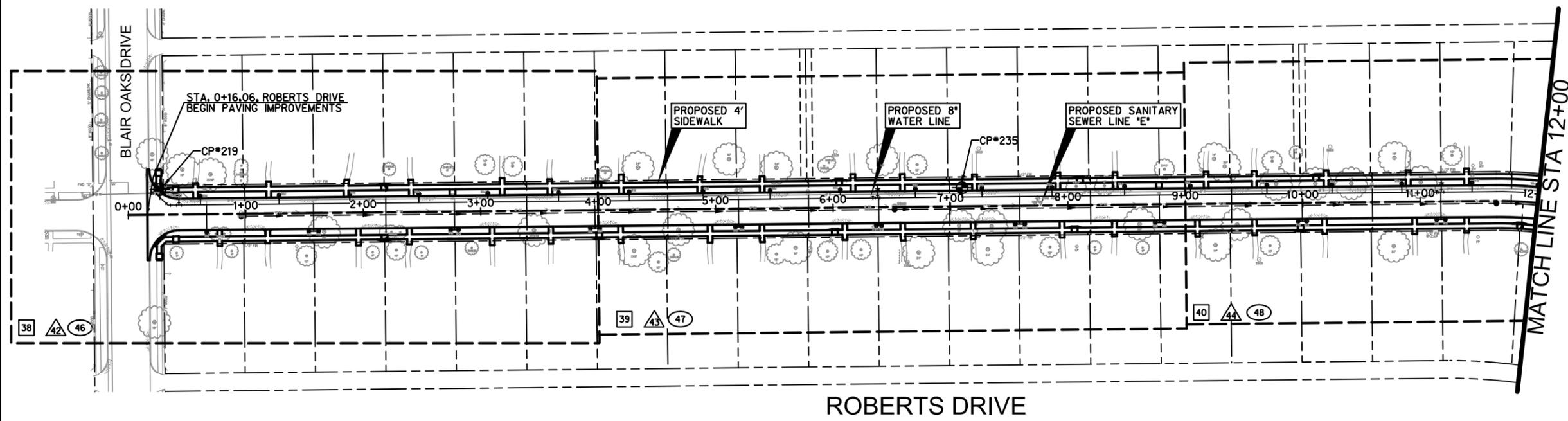
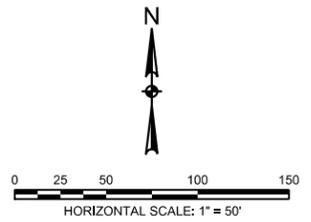


NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

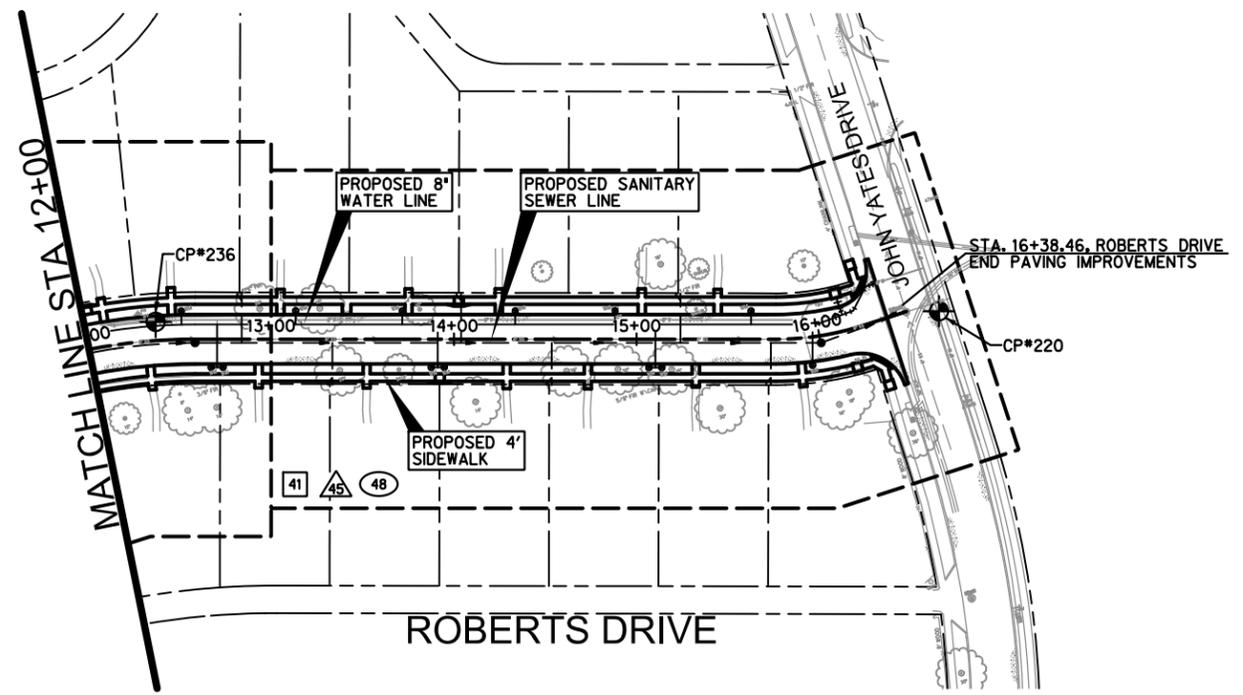
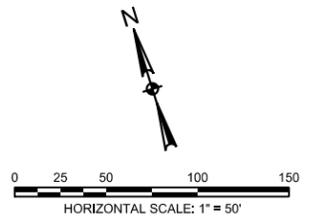


NASH DRIVE
 CROSS SECTION
 STA 20+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 35
CITY BID No.
 69-11-15-PHASE V



ROBERTS DRIVE



ROBERTS DRIVE

CENTERLINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
0+16.06	7085851.16	2462820.12	BEGIN ROBERTS DRIVE
11+64.77	7085862.95	2463968.76	PC
12+58.39	7085849.41	2464061.01	PT
15+76.23	7085754.94	2464364.49	PC
16+24.60	7085747.94	2464412.15	PT
16+38.46	7085748.08	2464426.01	END ROBERTS DRIVE

SURVEY CONTROL

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
219	7085872.78	2462830.90	588.13	SET 'X' TP
220	7085743.03	2464454.20	576.81	1/2" SIR RED 'TP' CAP
235	7085874.24	2463513.79	589.46	1/2" SIR RED 'TP' CAP
236	7085864.84	2464043.26	580.76	SET 'X' TP

LEGEND

	SHEET LIMITS
	99+00 CENTERLINE PAVING IMPROVEMENTS
	7 PAVING SHEET No.
	22 DRAINAGE SHEET No.
	38 WATER SHEET No.
	63 SANITARY SEWER SHEET No.
	CONTROL POINT No.

2/17/2015 2:31:11 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PROJ02.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PROJ02.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784

STATE OF TEXAS
LEIGH A. WOLLIS
103573
LICENSED PROFESSIONAL ENGINEER

Leigh A. Wollis
NAME: Leigh A. Wollis
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

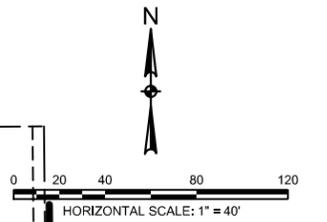
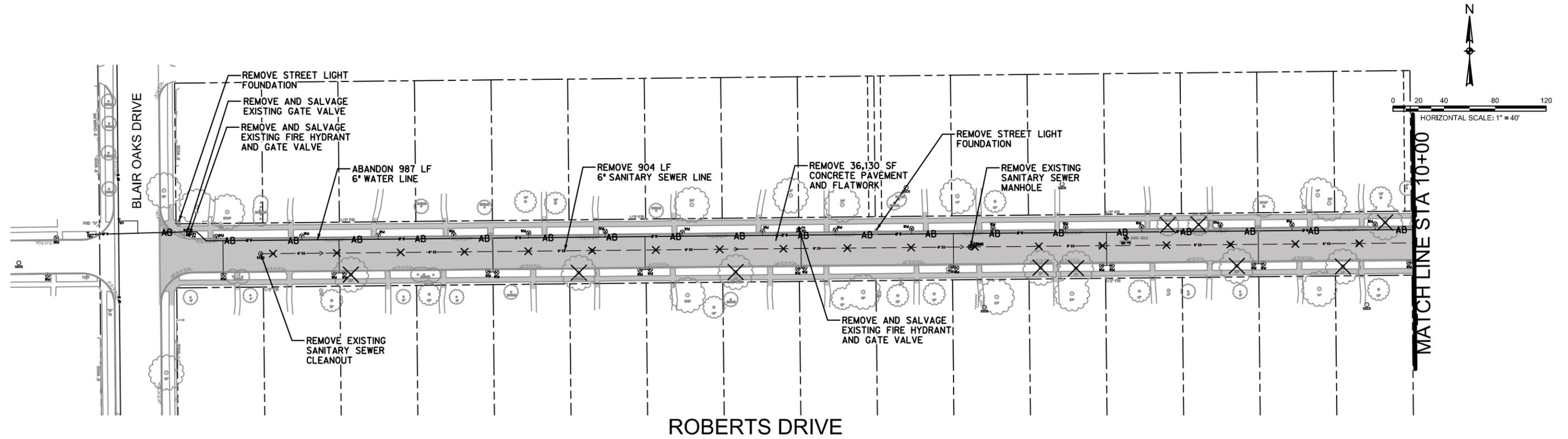
ROBERTS DRIVE
PROJECT LAYOUT

PHASE V STREET
RECONSTRUCTION

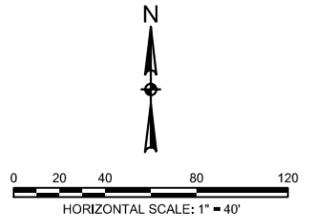
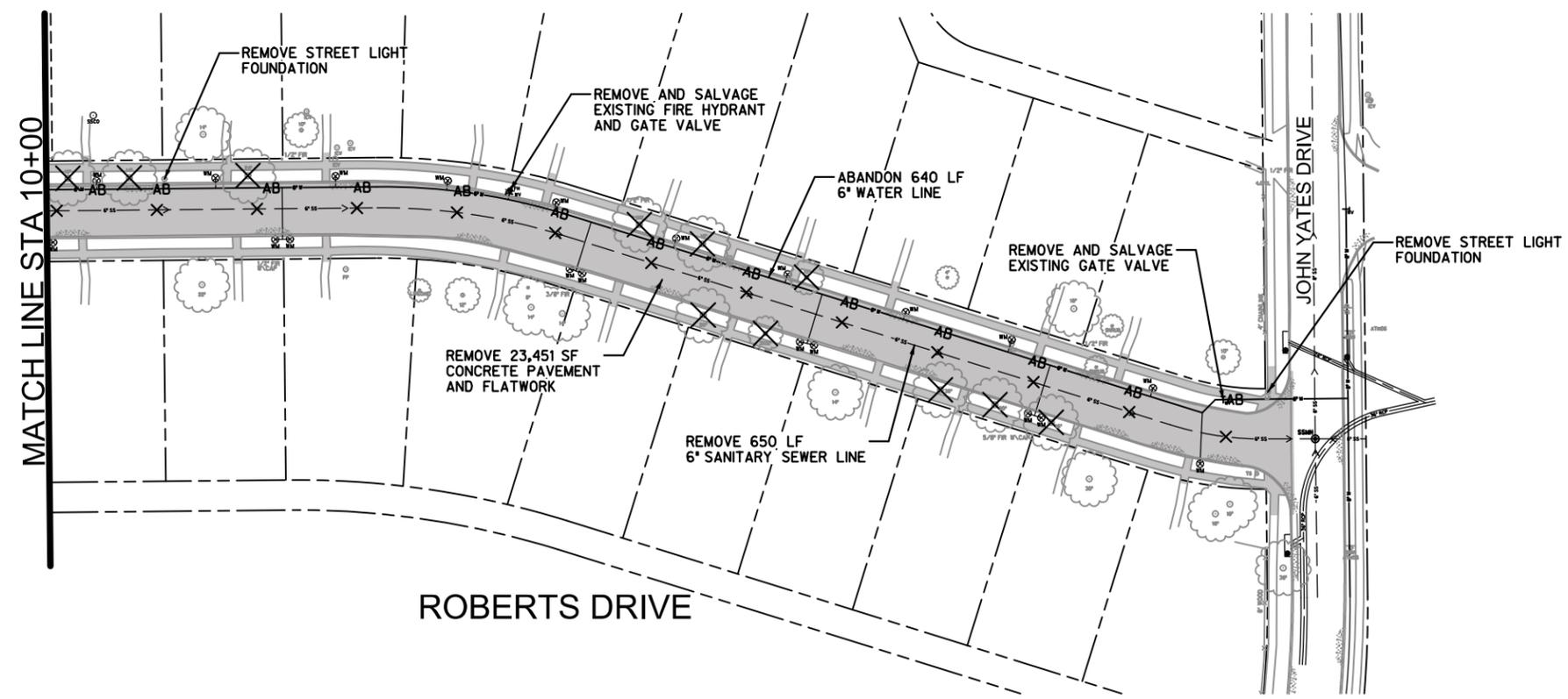
SHEET
36

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



ROBERTS DRIVE



ROBERTS DRIVE

GENERAL NOTES:

1. CONCRETE FLATWORK REMOVAL INCLUDES CONCRETE PAVEMENT, DRIVEWAYS, SIDEWALKS & FLUMES.
 2. ALL WATER METERS SHALL BE SALVAGED AND REUSED; ALL METER BOXES SHALL BE REMOVED.
 3. EXISTING UTILITY NOT TO BE ABANDONED OR REMOVED UNTIL PROPOSED UTILITY HAS BEEN COMPLETED AND IN SERVICE.
 4. REMOVAL OF TREES LESS THAN 12 INCHES IN DIAMETER ARE CONSIDERED SUBSIDIARY TO ROW PREP.
- * TREES SHOWN TO BE REMOVED ARE FOR BIDDING PURPOSES ONLY. ACTUAL NUMBER OF TREES TO BE REMOVED SHALL BE DETERMINED IN THE FIELD DURING CONSTRUCTION BY CITY INSPECTORS.

LEGEND

- CONCRETE FLATWORK REMOVAL
- UNDERGROUND UTILITY REMOVAL
- UNDERGROUND UTILITY ABANDONED IN PLACE
- TREE TO BE REMOVED*

2/17/2015 2:31:15 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869REMOV02.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869REMOV02.dgn

FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

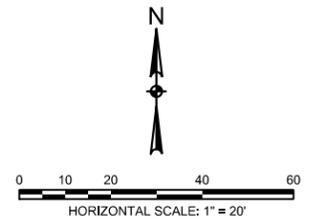


Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



ROBERTS DRIVE
 REMOVAL PLAN
 PHASE V STREET
 RECONSTRUCTION

SHEET
 37
 CITY BID No.
 69-11-15-PHASE V



STA 0+18.15, 38.47' LT ROBERTS DRIVE
CURB RETURN
MATCH EXISTING TOP OF CURB

STA 0+16.06, ROBERTS DRIVE
BEGIN CONCRETE PAVEMENT AND
MATCH EXISTING PAVEMENT

STA 0+17.98, 38.47' RT ROBERTS DRIVE
CURB RETURN
MATCH EXISTING TOP OF CURB

LOT 1, BLK 80
DODDS, CHARLES THOMAS
5001 ROBERTS DRIVE
DOC# 3230-950
D.R.D.C.T.

LOT 2, BLK 80
KOVAR, DIANNE L
5005 ROBERTS DRIVE
DOC# 02-73376
D.R.D.C.T.

LOT 3, BLK 80
POYNTER, JOHN F & FAITH R
5009 ROBERTS DRIVE
DOC# 2830-33
D.R.D.C.T.

LOT 4, BLK 80
FALCON, CIPRIAN
5013 ROBERTS DRIVE
DOC# 03-82156
D.R.D.C.T.

LOT 5, BLK 80
MARAZOFF, WILLIAM M
5017 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 6, BLK 80
KO, ERIC CHIN
5021 ROBERTS DRIVE
NO DEED AVAILABLE

CONSTRUCT ACCESSIBLE
RAMP (TYPE 12) (TYP)

STA 0+43.15, 13.50' LT ROBERTS DRIVE
CURB RETURN
T/C= 588.60

REMOVE AND REINSTALL
EXISTING COMMUNITY
MAILBOXES

STA 0+42.98, 13.50' RT ROBERTS DRIVE
CURB RETURN
T/C= 588.55

LOT 51, BLK 79
ALDAMA, ISMAEL &
GOMEZ, BERTHA ALICIA
5000 ROBERTS DRIVE
DOC# 2006-122177
D.R.D.C.T.

LOT 50, BLK 79
SIEMENS, RANDALL A & GLENNA D
5004 ROBERTS DRIVE
DOC# 05-24644
D.R.D.C.T.

LOT 49, BLK 79
SMITH, JIMMY VAN
5008 ROBERTS DRIVE
DOC# 99-0045444
D.R.D.C.T.

LOT 48, BLK 79
LEWIS, CALVIN RITCHIE
5012 ROBERTS DRIVE
NO DEED AVAILABLE

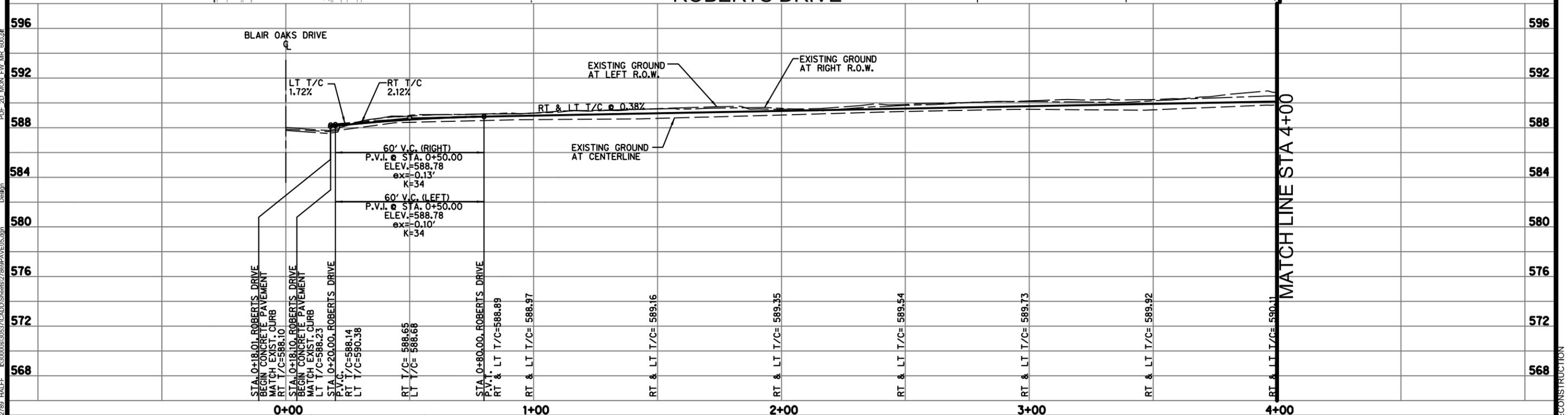
LOT 47, BLK 79
CHAVEZ, JUAN
5016 ROBERTS DRIVE
DOC# 2008-87459
D.R.D.C.T.

LOT 46, BLK 79
WOLFINBARGER, CAROL A
5020 ROBERTS DRIVE
DOC# 94-0035795
D.R.D.C.T.

ROBERTS DRIVE

MATCH LINE STA 4+00

* NOTE:
5'x5' SIDEWALK PASS LANES
SHALL BE CONSTRUCTED AT
200' MAX SPACING. SEE DETAIL.



MATCH LINE STA 4+00

2/17/2015 2:31:18 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE05.dgn Design

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE05.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

ROBERTS DRIVE
PLAN AND PROFILE
STA 0+00 TO STA 4+00

PHASE V STREET
RECONSTRUCTION

SHEET
38

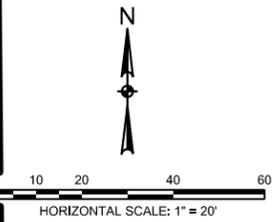
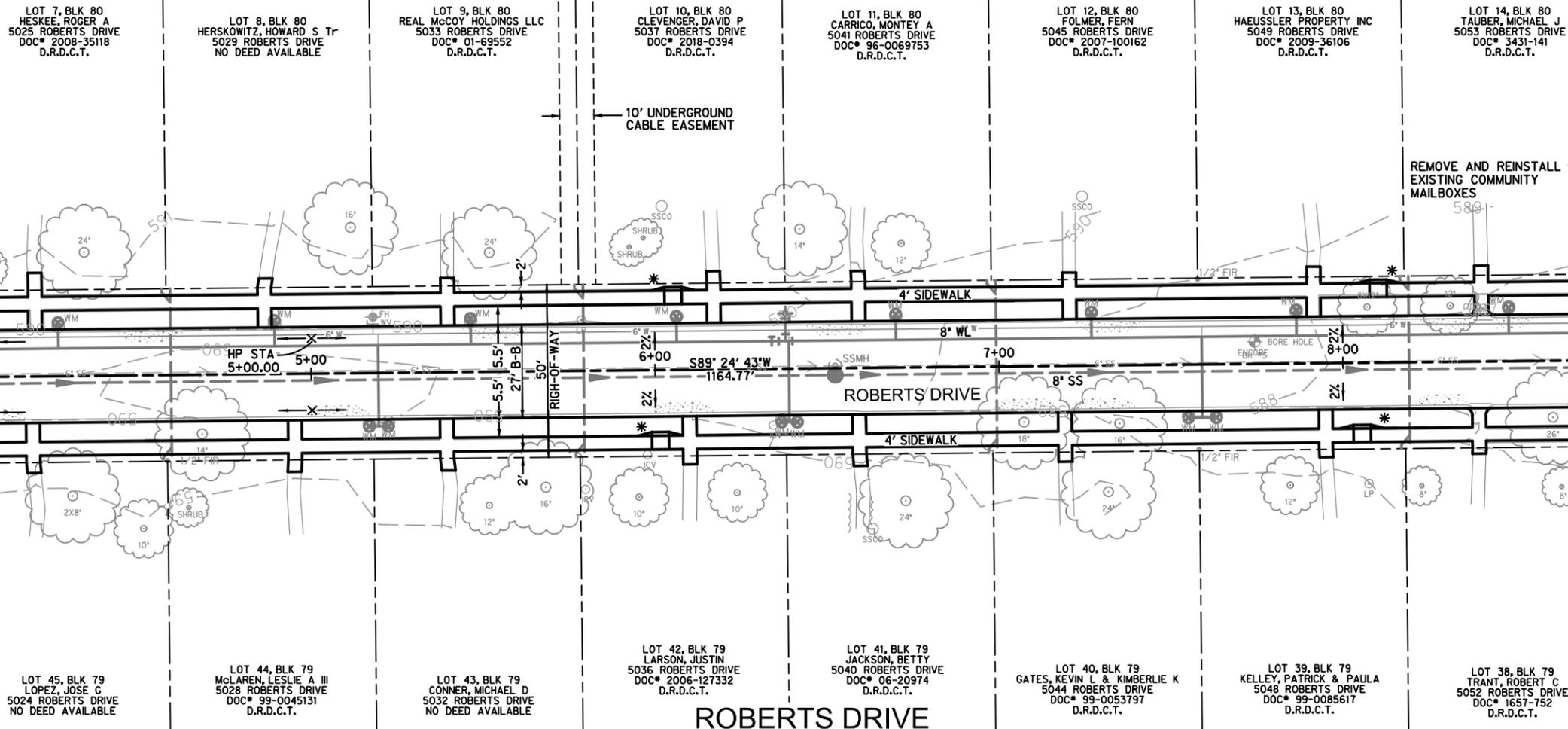
CITY BID No.
69-11-15-PHASE V

MATCH LINE STA 4+00

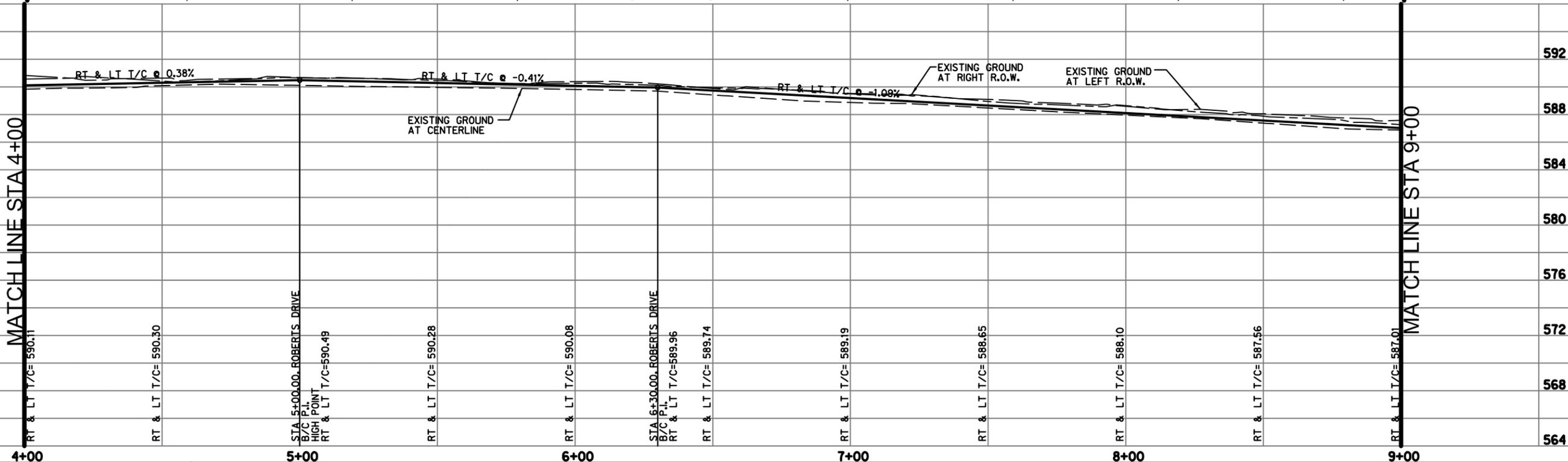
MATCH LINE STA 4+00

MATCH LINE STA 9+00

MATCH LINE STA 9+00



* NOTE:
5'x5' SIDEWALK PASS LANES
SHALL BE CONSTRUCTED AT
200' MAX SPACING.
SEE DETAIL.



2/17/2015 2:31:20 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869PAVE06.dgn Design

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE06.dgn
CADD DRAWN	
B.L.M. CHECKED	

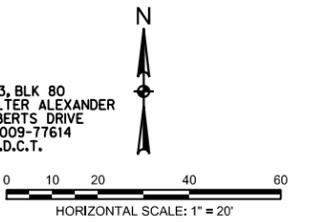
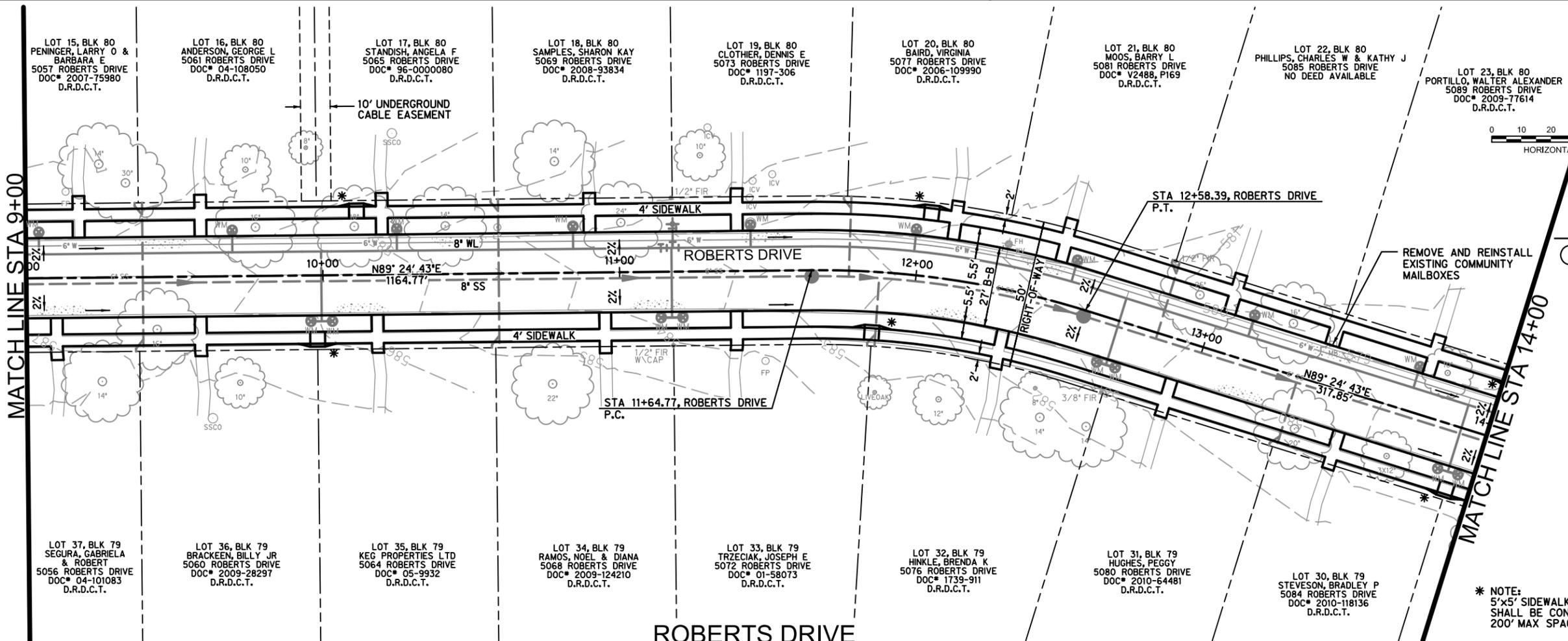


NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



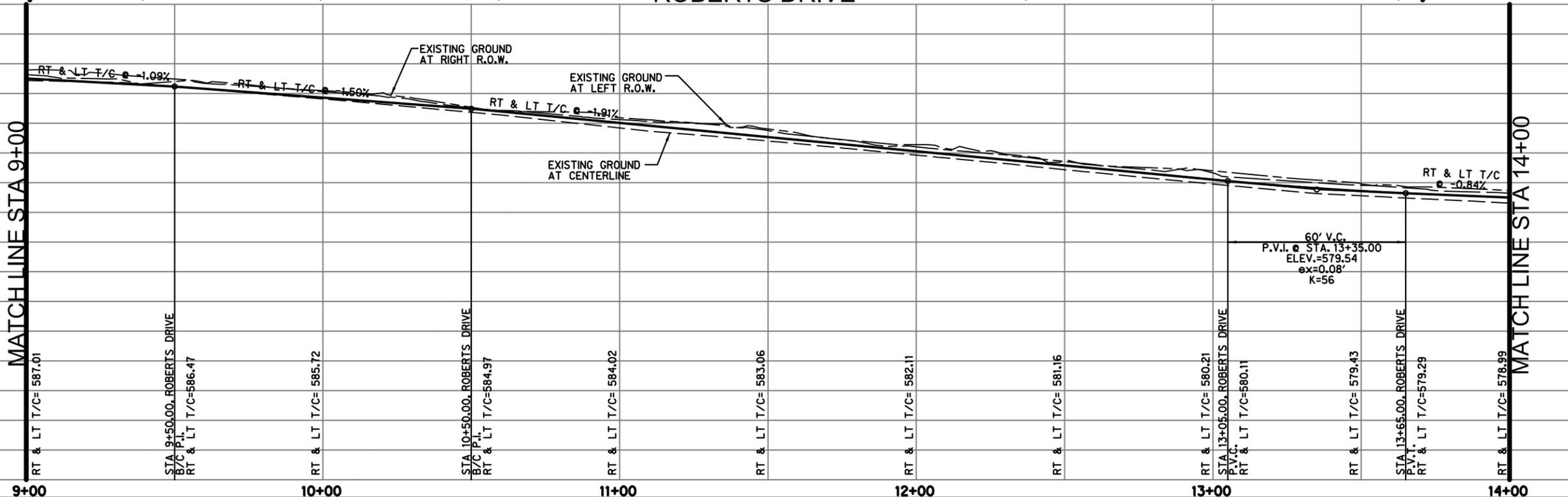
ROBERTS DRIVE
 PLAN AND PROFILE
 STA 4+00 TO STA 9+00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 39
CITY BID No.
 69-11-15-PHASE V



CURVE DATA
 ① $A=17^{\circ} 52' 45''$
 $R=300.00'$
 $L=93.62'$
 $T=47.19'$
 $CB=N 81^{\circ} 38' 55'' W$
 $CL=93.24'$

* NOTE:
 5'x5' SIDEWALK PASS LANES
 SHALL BE CONSTRUCTED AT
 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:31:22 PM ah2789 HALF FF R:\30000s\30537\CADD\Sheets\27869PAVE07.dgn Design

NO.	REVISION	BY	DATE

HALF
 DESIGNED
 CADD
 DRAWN
 B.L.M.
 CHECKED

SCALE
 HORIZ. : 1" = 20'
 VERT. : 1" = 4'
 AVO: **30537**
 FILE: 27869PAVE07.dgn

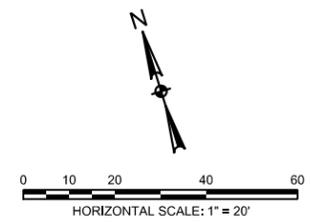


NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



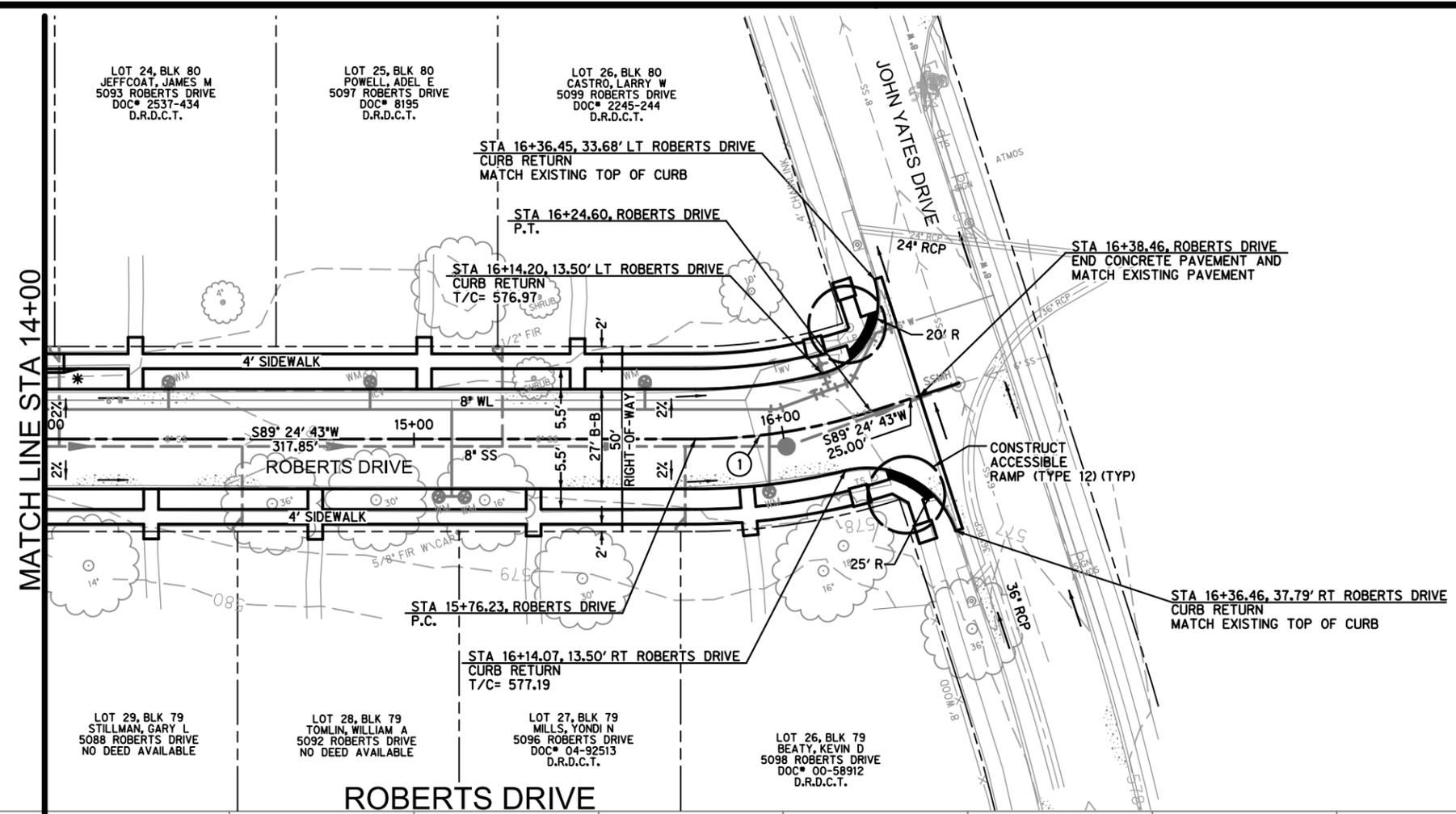
ROBERTS DRIVE
 PLAN AND PROFILE
 STA 9+00 TO STA 14+00
 PHASE V STREET RECONSTRUCTION

SHEET
 40
CITY BID No.
 69-11-15-PHASE V

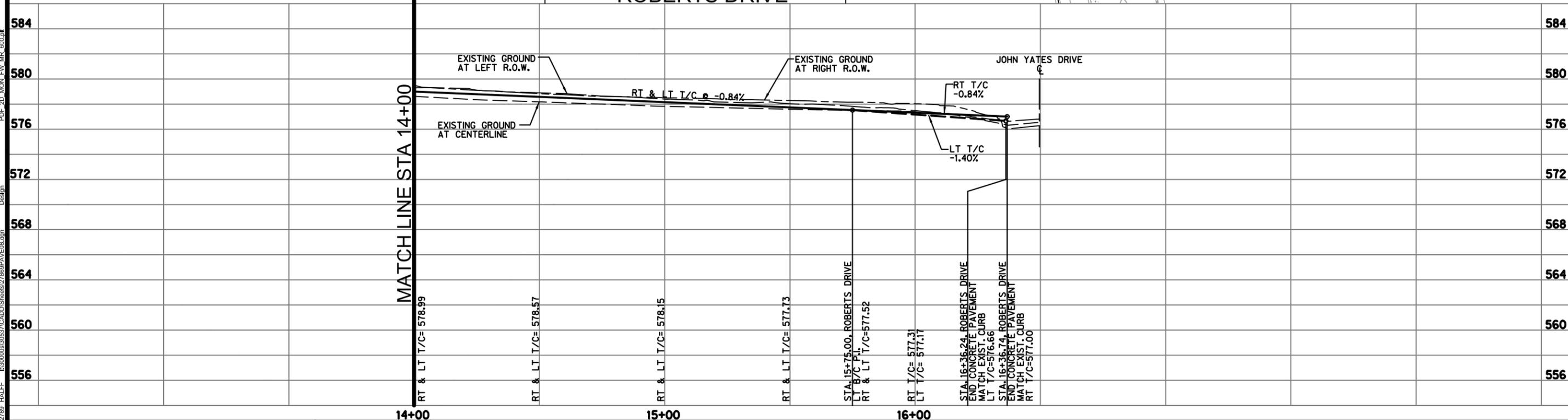


CURVE DATA

① $\Delta=17^{\circ} 52' 43''$
 $R=155.00'$
 $L=48.37'$
 $T=24.38'$
 $CB=S 81^{\circ} 38' 58'' E$
 $CL=48.17'$



* NOTE:
 5'x5' SIDEWALK PASS LANES
 SHALL BE CONSTRUCTED AT
 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:31:25 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869PAVE08.dgn Design

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4'
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PAVE08.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

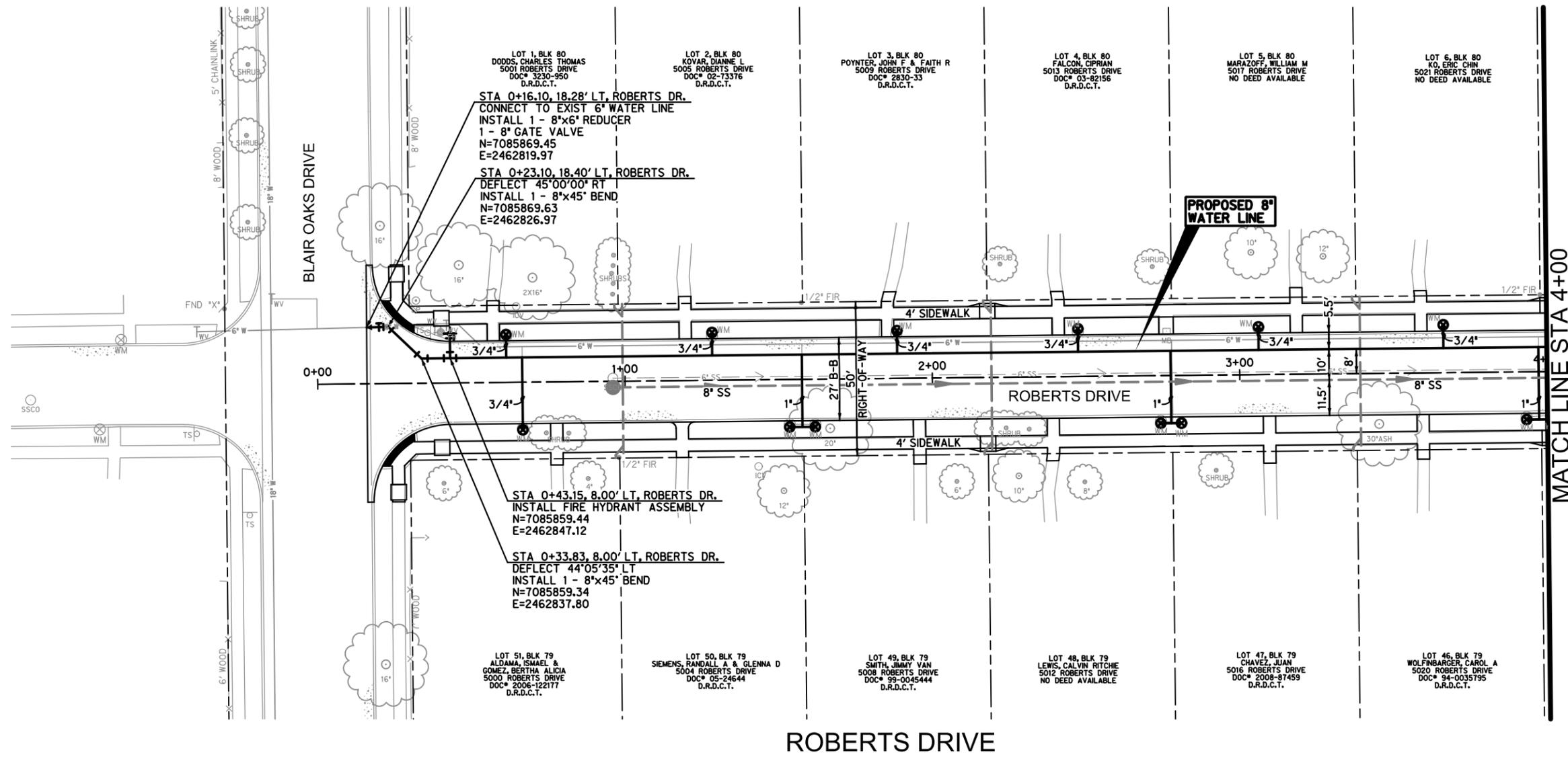
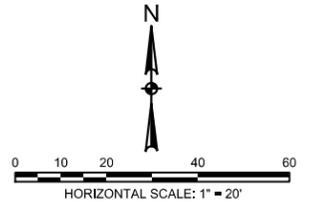
THE COLONY
 City by the Lake

ROBERTS DRIVE
 PLAN AND PROFILE
 STA 14+00 TO END

PHASE V STREET
 RECONSTRUCTION

SHEET
 41

CITY BID No.
 69-11-15-PHASE V



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:31:27 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869UWTR04.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR04.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

NAME: *Leigh A. Willis*
 DATE: 2/20/15
 TBPE FIRM *F-312

THE COLONY
 City by the Lake

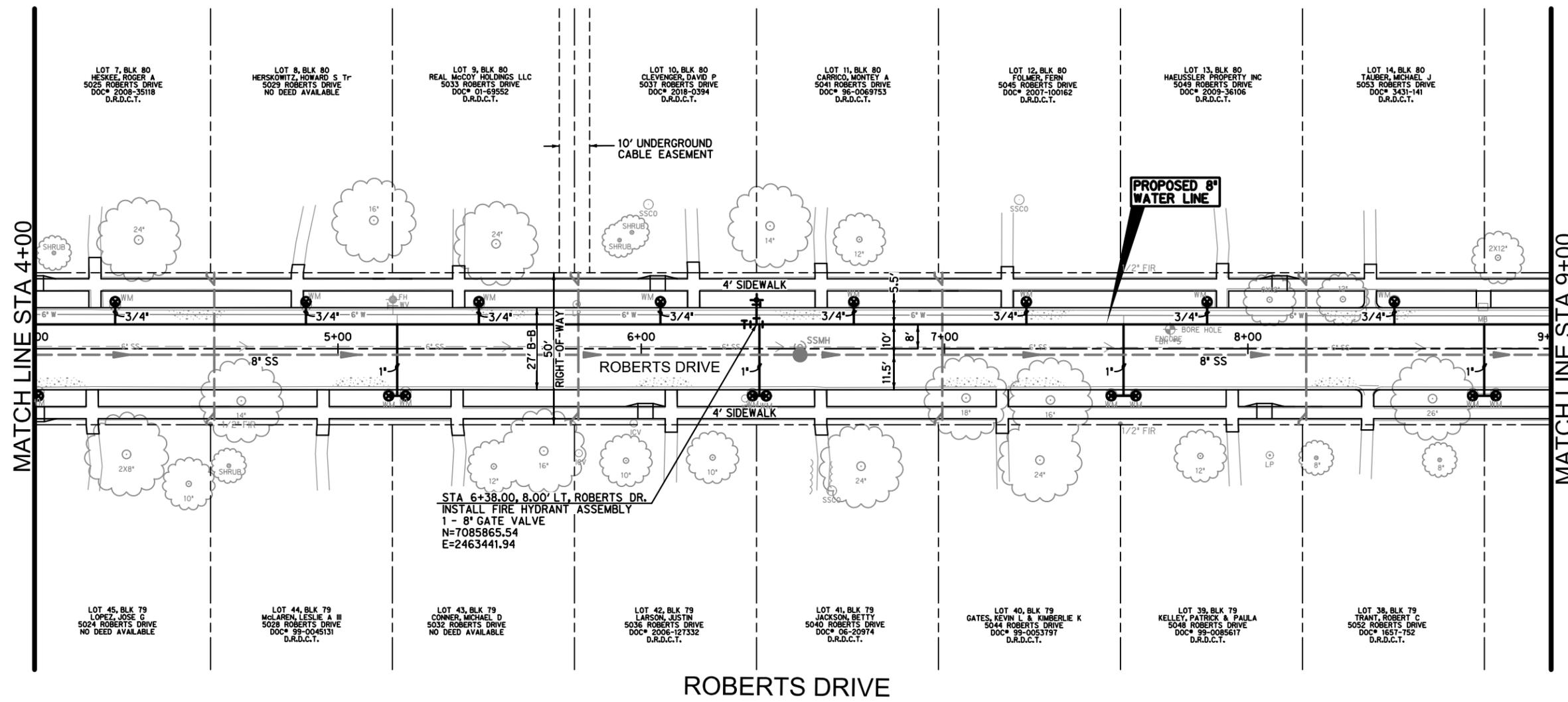
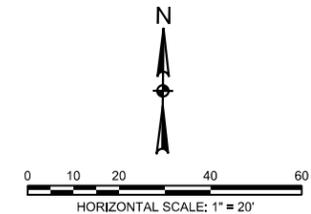
ROBERTS DRIVE
 WATER LINE PLAN
 STA 0+00 TO STA 4+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 42

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



STA 6+38.00, 8.00' LT, ROBERTS DR.
 INSTALL FIRE HYDRANT ASSEMBLY
 1 - 8" GATE VALVE
 N=7085865.54
 E=2463441.94

NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL
 AND VERTICAL LOCATION OF EXISTING
 WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:31:29 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869\UWTR05.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869\UWTR05.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

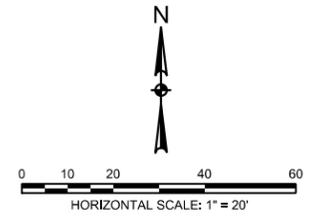
LEIGH A. HOLLIS
 LICENSED PROFESSIONAL ENGINEER
 NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

THE COLONY
 City by the Lake

ROBERTS DRIVE
 WATER LINE PLAN
 STA 4+00 TO STA 9+00
 PHASE V STREET
 RECONSTRUCTION

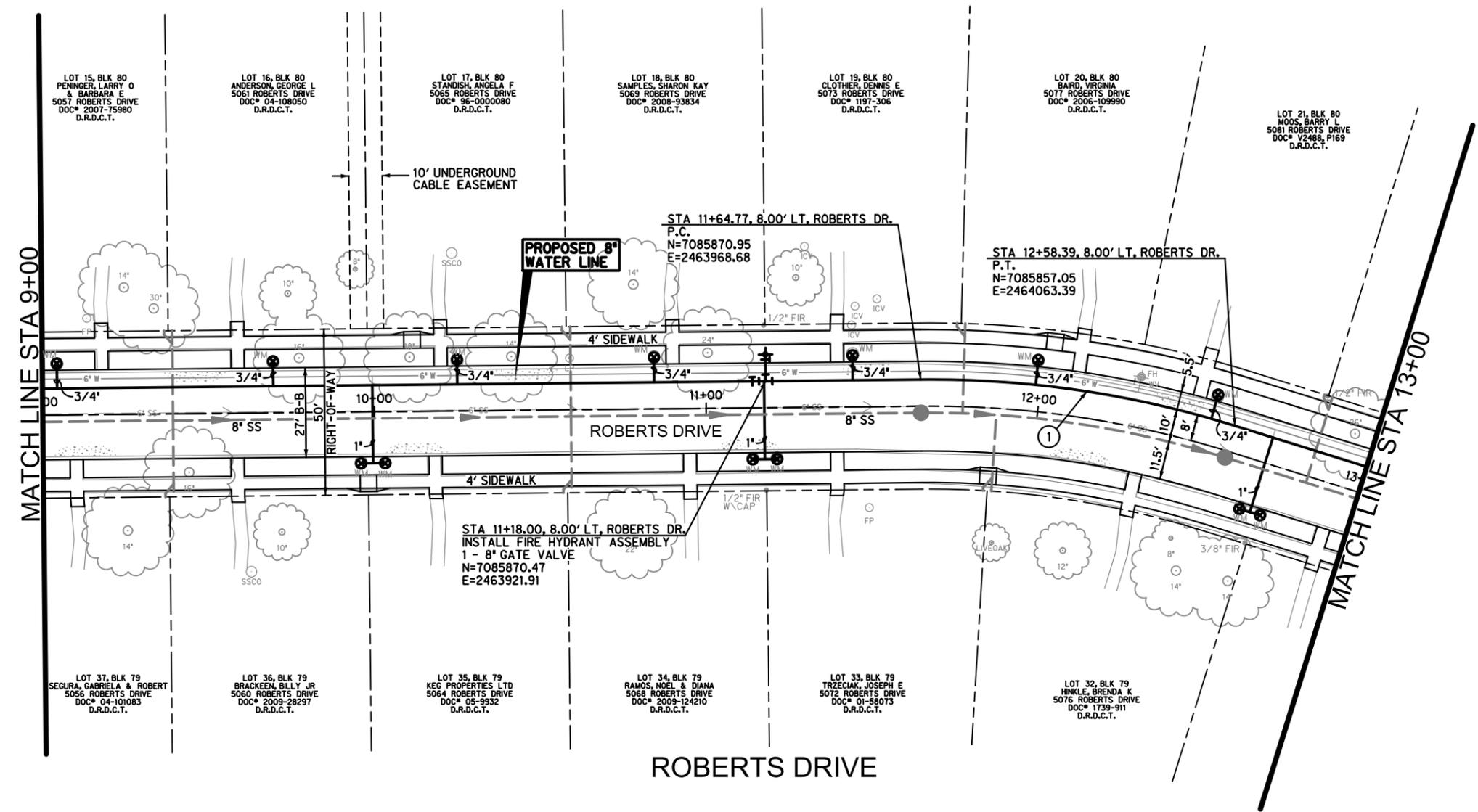
SHEET
 43
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

①	Δ=17° 52' 45"
	R=308.00'
	T=48.45'
	L=96.11'



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:31:32 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869UWTR06.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR06.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



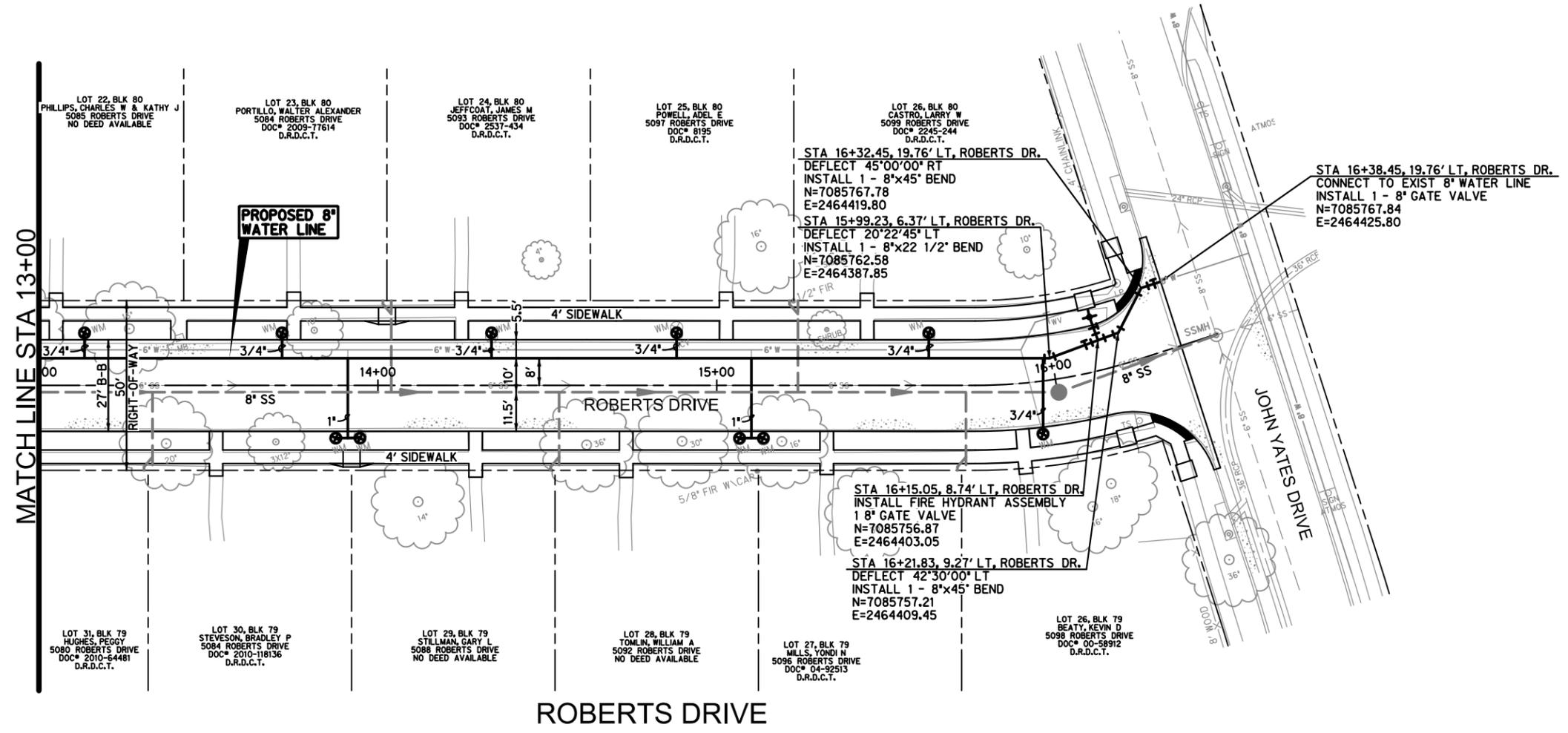
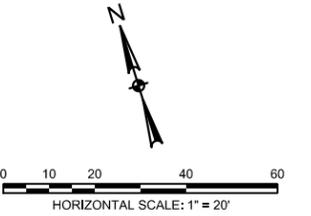
ROBERTS DRIVE
 WATER LINE PLAN
 STA 9+00 TO STA 13+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 44

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:31:34 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869\UWTR07.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869\UWTR07.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

STATE OF TEXAS
 LEIGH A. WOLLIS
 LICENSED PROFESSIONAL ENGINEER
 103573

Leigh A. Wollis
 NAME: Leigh A. Wollis
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

ROBERTS DRIVE
 WATER LINE PLAN
 STA 13+00 TO END

PHASE V STREET
 RECONSTRUCTION

SHEET
 45

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



0 10 20 40 60
HORIZONTAL SCALE: 1" = 20'

LOT 1, BLK 80
DODDS, CHARLES THOMAS
5001 ROBERTS DRIVE
DOC# 3230-950
D.R.D.C.T.

LOT 2, BLK 80
KOVAR, DIANNE L
5005 ROBERTS DRIVE
DOC# 02-73376
D.R.D.C.T.

LOT 3, BLK 80
POYNTER, JOHN F. & FAITH R
5009 ROBERTS DRIVE
DOC# 2830-33
D.R.D.C.T.

LOT 4, BLK 80
FALCON, CIPRIAN
5013 ROBERTS DRIVE
DOC# 03-82156
D.R.D.C.T.

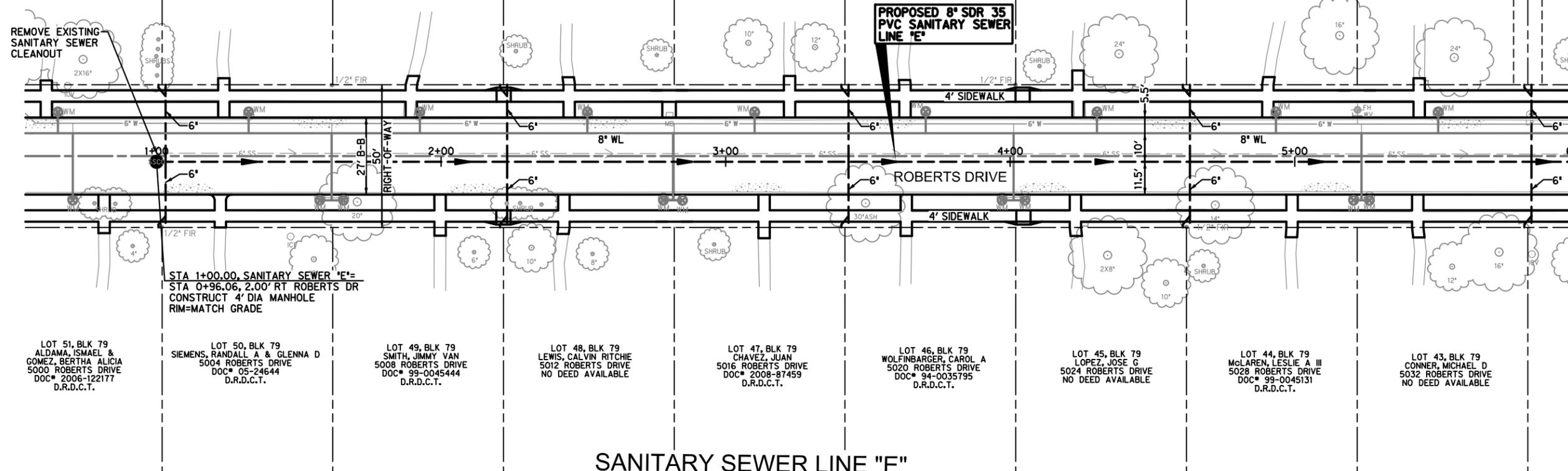
LOT 5, BLK 80
MARAZOFF, WILLIAM M
5017 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 6, BLK 80
KO, ERIC CHIN
5021 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 7, BLK 80
HESKEE, ROGER A
5025 ROBERTS DRIVE
DOC# 2008-35118
D.R.D.C.T.

LOT 8, BLK 80
HERSKOWITZ, HOWARD S TR
5029 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 9, BLK 80
REAL MCCOY HOLDINGS LLC
5033 ROBERTS DRIVE
DOC# 01-69552
D.R.D.C.T.



STA 1+00.00, SANITARY SEWER "E"
STA 0+96.06, 2.00' RT ROBERTS DR
CONSTRUCT 4' DIA MANHOLE
RIM=MATCH GRADE

LOT 51, BLK 79
ALDAMA, ISMAEL &
GOMEZ, BERTHA ALICIA
5000 ROBERTS DRIVE
DOC# 2006-122177
D.R.D.C.T.

LOT 50, BLK 79
SIEMENS, RANDALL A & GLENNA D
5004 ROBERTS DRIVE
DOC# 05-24644
D.R.D.C.T.

LOT 49, BLK 79
SMITH, JIMMY VAN
5008 ROBERTS DRIVE
DOC# 99-0045444
D.R.D.C.T.

LOT 48, BLK 79
LEWIS, CALVIN RITCHIE
5012 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 47, BLK 79
CHAVEZ, JUAN
5016 ROBERTS DRIVE
DOC# 2008-87459
D.R.D.C.T.

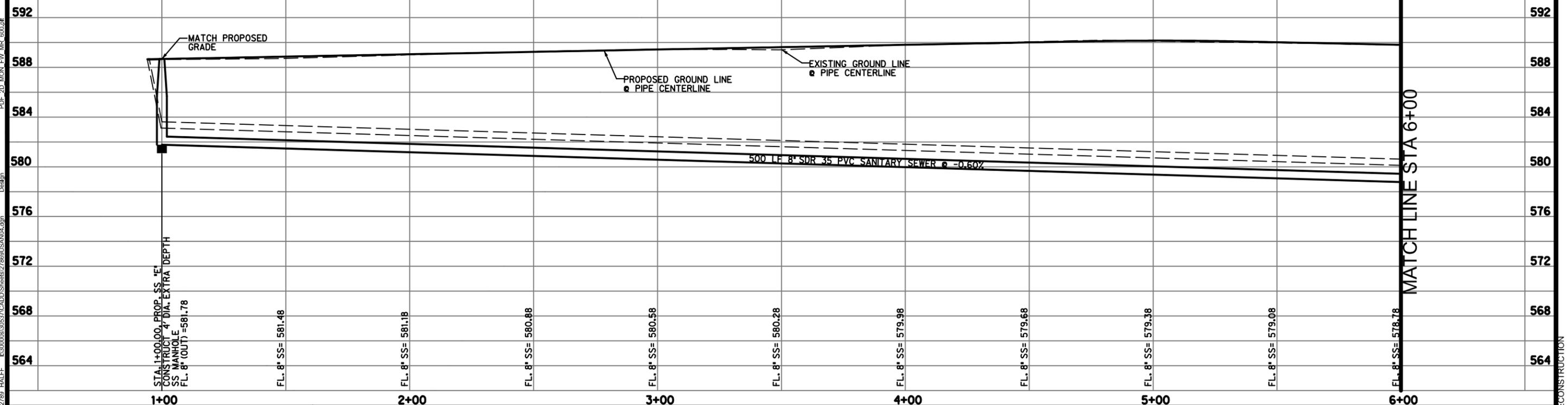
LOT 46, BLK 79
WOLFINBARGER, CAROL A
5020 ROBERTS DRIVE
DOC# 94-0035795
D.R.D.C.T.

LOT 45, BLK 79
LOPEZ, JOSE G
5024 ROBERTS DRIVE
NO DEED AVAILABLE

LOT 44, BLK 79
McLAREN, LESLIE A III
5028 ROBERTS DRIVE
DOC# 99-0045131
D.R.D.C.T.

LOT 43, BLK 79
CONNER, MICHAEL D
5032 ROBERTS DRIVE
NO DEED AVAILABLE

SANITARY SEWER LINE "E"



STA 1+00.00, PROP. SS "E"
CONSTRUCT 4' DIA. EXTRA DEPTH
SS MANHOLE
FL. 8" (OUT) = 581.78

FL. 8" SS= 581.48

FL. 8" SS= 581.18

FL. 8" SS= 580.88

FL. 8" SS= 580.58

FL. 8" SS= 580.28

FL. 8" SS= 579.98

FL. 8" SS= 579.68

FL. 8" SS= 579.38

FL. 8" SS= 579.08

FL. 8" SS= 578.78

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN04.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

SANITARY SEWER LINE "E"
PLAN AND PROFILE
STA 1+00 TO STA 6+00

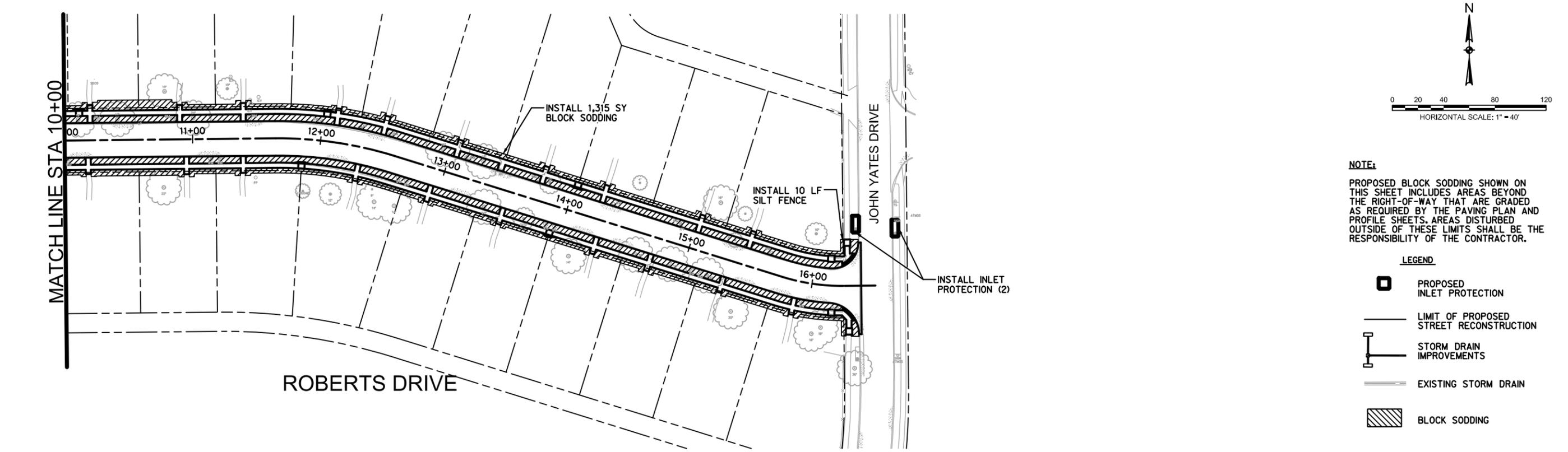
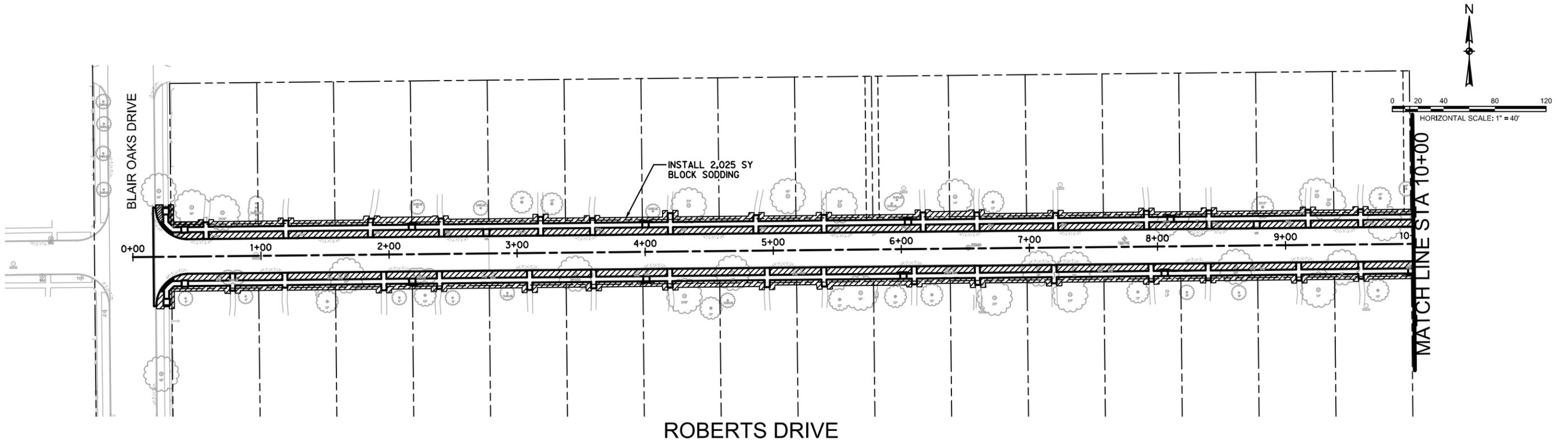
PHASE V STREET
RECONSTRUCTION

SHEET
46

CITY BID No.
69-11-15-PHASE V

2/17/2015 2:31:37 PM a12789 HALF R:\30000s\30537\CADD\Sheets\27869USAN04.dgn

PHASE IV STREET RECONSTRUCTION



NOTE:
 PROPOSED BLOCK SODDING SHOWN ON THIS SHEET INCLUDES AREAS BEYOND THE RIGHT-OF-WAY THAT ARE GRADED AS REQUIRED BY THE PAVING PLAN AND PROFILE SHEETS. AREAS DISTURBED OUTSIDE OF THESE LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

- LEGEND**
-  PROPOSED INLET PROTECTION
 -  LIMIT OF PROPOSED STREET RECONSTRUCTION
 -  STORM DRAIN IMPROVEMENTS
 -  EXISTING STORM DRAIN
 -  BLOCK SODDING

2/17/2015 2:31:45 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869ECPL02.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869ECPL02.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



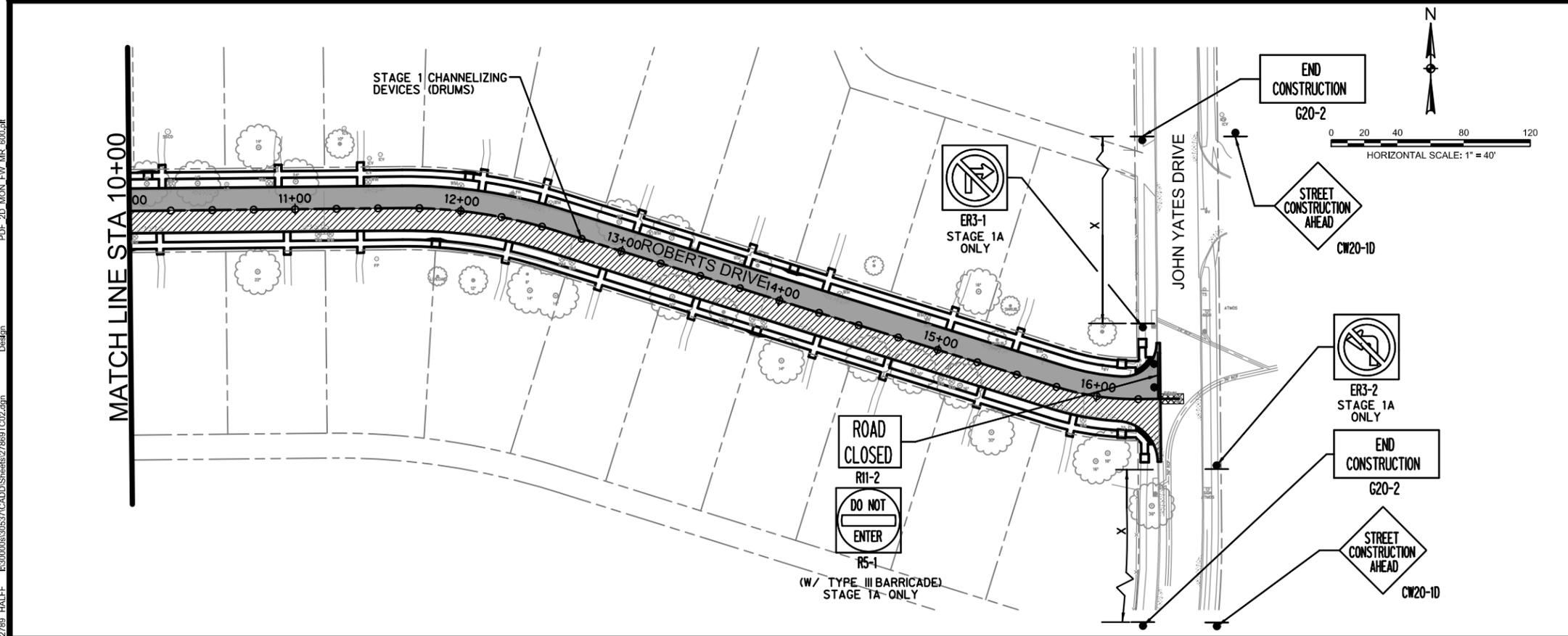
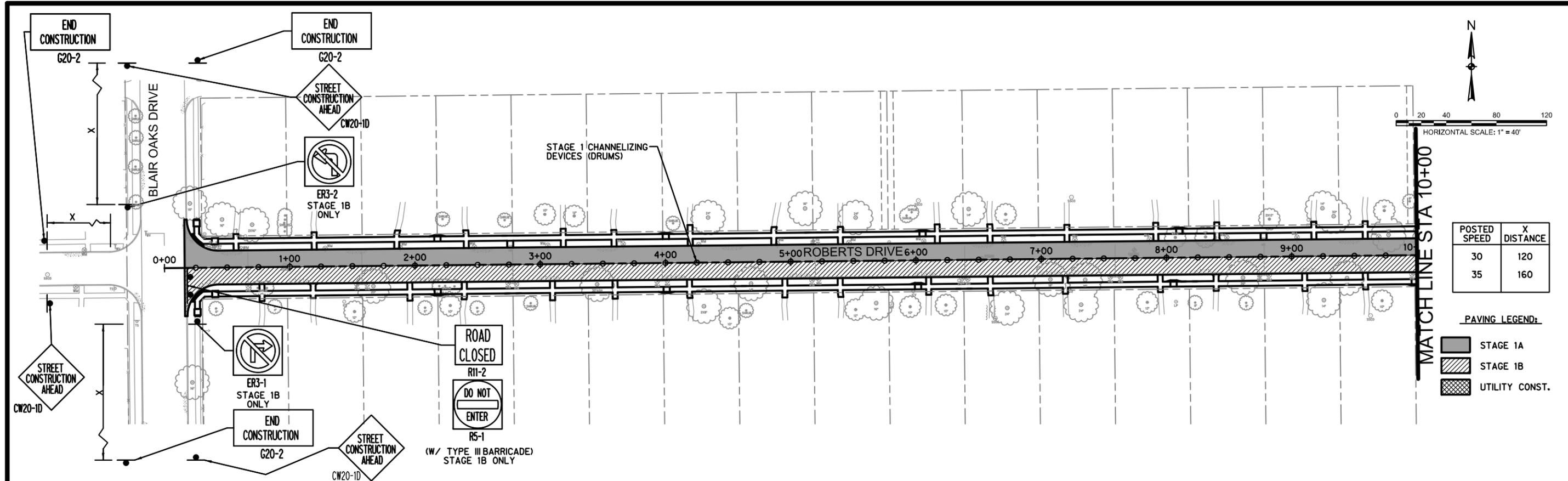
ROBERTS DRIVE
 EROSION CONTROL PLAN

PHASE V STREET
 RECONSTRUCTION

SHEET
 49

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



- TRAFFIC CONTROL NOTES:**
1. THE TRAFFIC CONTROL DEVICES SHOWN ARE TO BE ERECTED DURING PAVING OPERATIONS, DURING EXISTING PAVEMENT REMOVAL AND UTILITY CONSTRUCTION WHILE TRAFFIC IS BEING ALLOWED ON THE SUBGRADE, THE CONTRACTOR SHALL ERECT ROAD CLOSED (R11-2) OR ROAD CLOSED TO THRU TRAFFIC (R11-4) AT THE ENTRANCE OF EACH STREET.
 2. SEE SHEET 4 FOR GENERAL NOTES FOR TRAFFIC CONTROL.
 3. FOR UTILITY WORK OCCUPYING SMALL AREAS SEE TCP(2-2B) DETAIL.
 4. STAGES 1A & 1B MAY BE REVERSED.
 5. TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE CONSIDERED AN ESTABLISHED MINIMUM. CONTRACTOR SHALL PROVIDE ADDITIONAL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD IN ORDER TO SAFELY GUIDE TRAFFIC AROUND ACTIVITIES NOT ADDRESSED BY THIS PLAN.
 6. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY PRIOR TO BEGINNING WORK.
 7. ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- CONSTRUCTION SEQUENCING NOTES:**
1. CONSTRUCT UTILITIES. ONLY THE NECESSARY AMOUNT OF EXISTING PAVEMENT SHALL BE REMOVED TO INSTALL THE PROPOSED UTILITIES. UTILITY INSTALLATION AREAS SHALL BE BACKFILLED AND MADE PASSABLE USING AT LEAST 1-INCH OF TEMPORARY HMA. BY THE END OF EACH WORKING DAY, ACCESS TO DRIVEWAYS WILL BE REQUIRED AT ALL TIMES EXCEPT WHEN CROSSING DRIVEWAY WITH THE UTILITY CONSTRUCTION.
 2. AFTER UTILITIES HAVE BEEN REPLACED THE ROADWAY SHALL BE PAVED ONE-HALF AT A TIME. IF DRIVEWAYS ARE PRESENT, GRAVEL SHALL BE PLACED IN ORDER TO MAINTAIN ACCESS AT ALL TIMES. EXISTING PAVEMENT ON THE OTHER HALF SHALL REMAIN IN PLACE UNTIL THE FIRST HALF IS COMPLETE. THE PROCEDURE SHALL BE REPEATED FOR THE SECOND HALF.

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869TC02.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



ROBERTS DRIVE TRAFFIC CONTROL PLAN
 PHASE V STREET RECONSTRUCTION

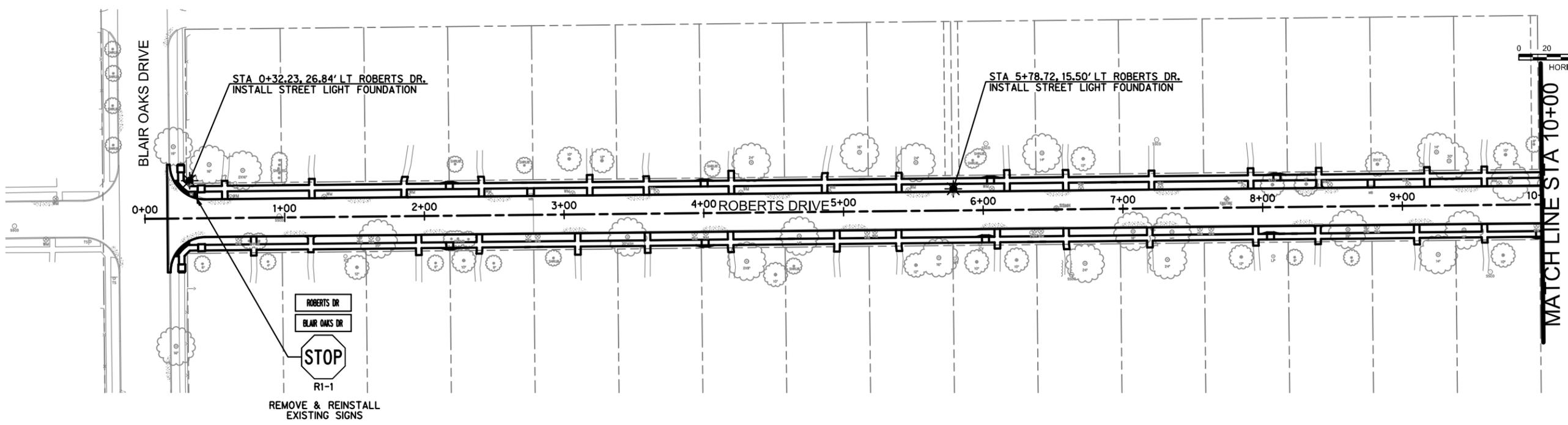
SHEET 50
 CITY BID No. 69-11-15-PHASE V

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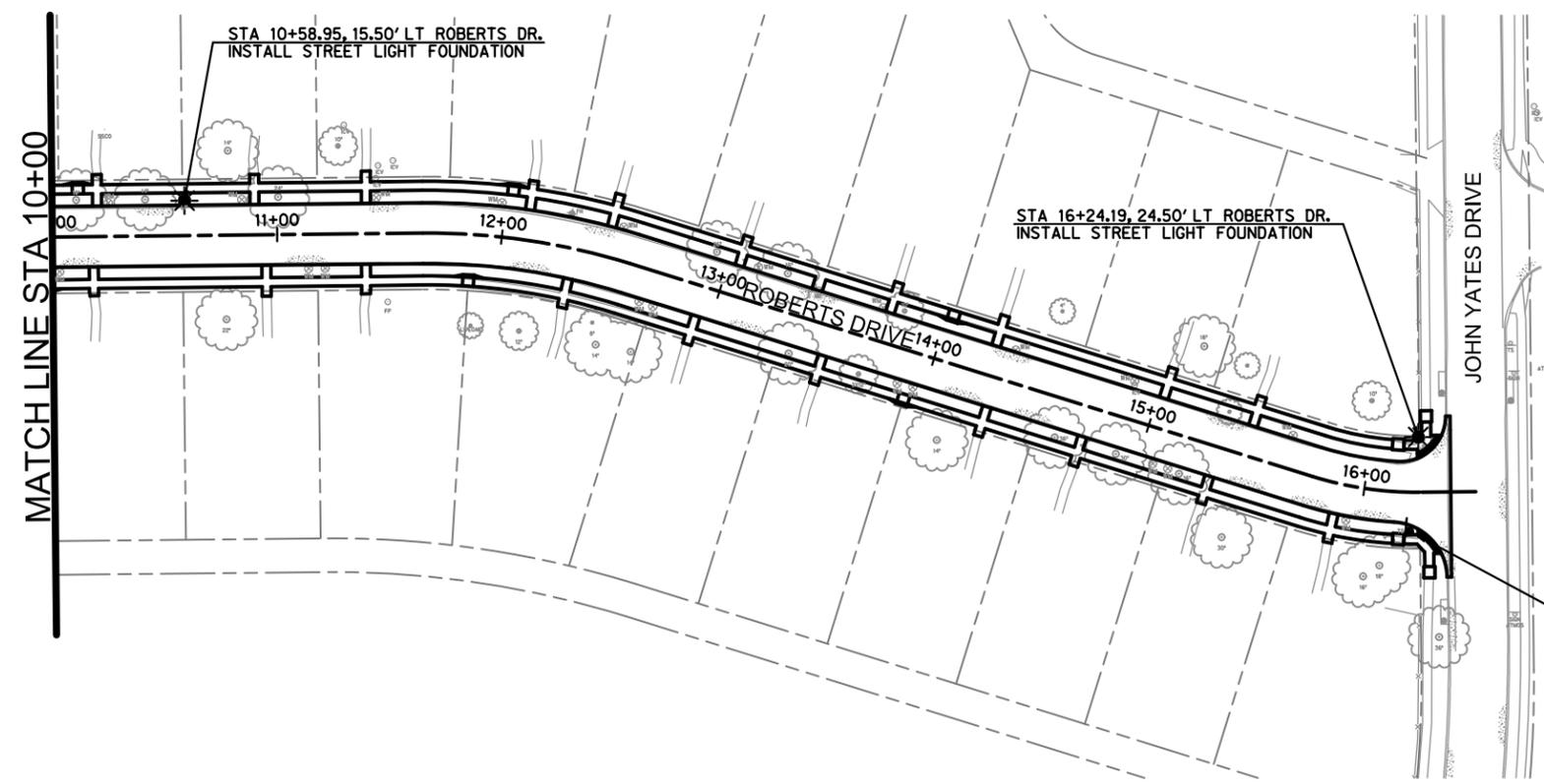
PHASE IV STREET RECONSTRUCTION



0 20 40 80 120
HORIZONTAL SCALE: 1" = 40'



0 20 40 80 120
HORIZONTAL SCALE: 1" = 40'



NOTE
1. SEE PROJECT GENERAL NOTES (SHEET 4) FOR PAVEMENT MARKING, LIGHTING AND SIGNAGE NOTES.

2/17/2015 2:31:51 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869PMKS02.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PMKS02.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



Leigh A. Willis
NAME: Leigh A. Willis
DATE: 2/20/15
TBPE FIRM #F-312

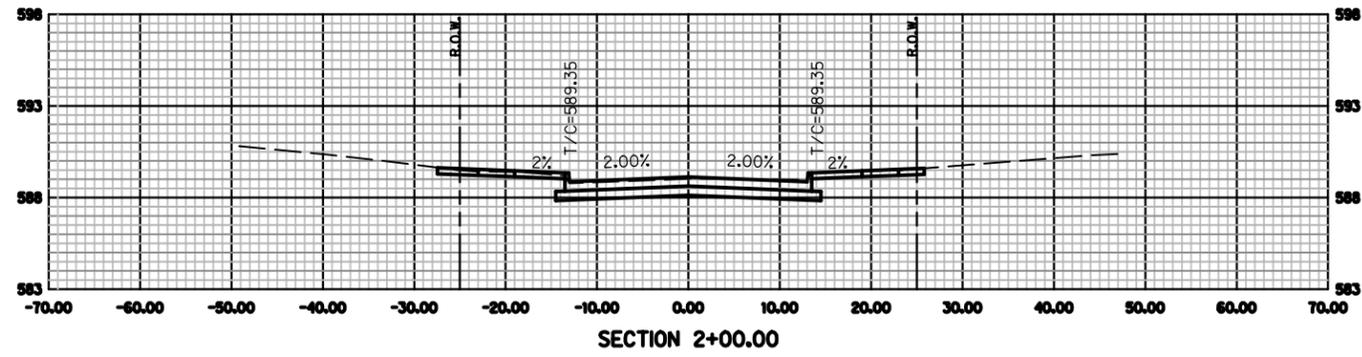


ROBERTS DRIVE
PAVEMENT MARKINGS, LIGHTING, AND
SIGNAGE PLAN

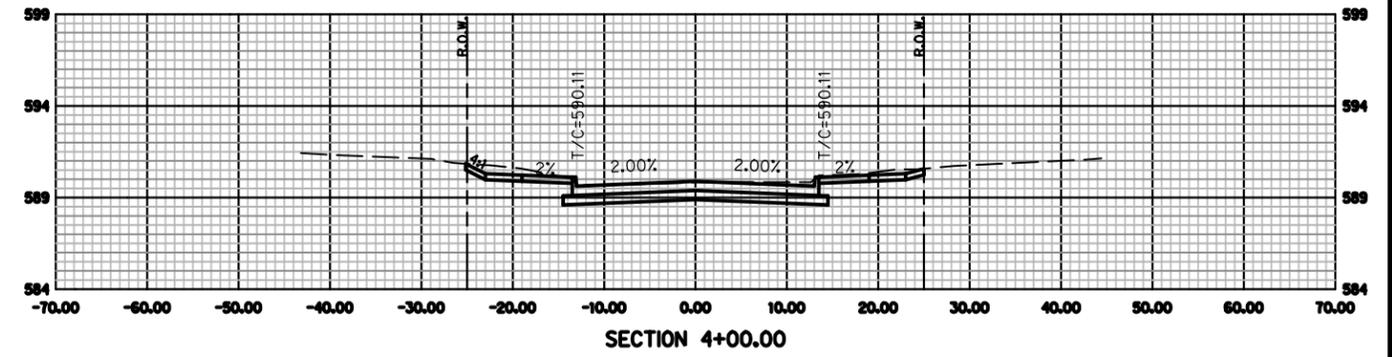
PHASE V STREET
RECONSTRUCTION

SHEET
51
CITY BID No.
69-11-15-PHASE V

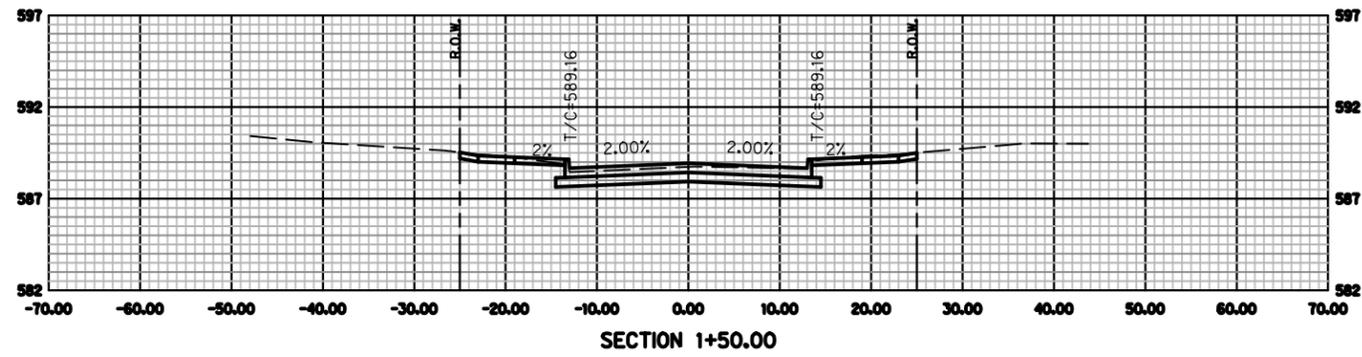
PHASE IV STREET RECONSTRUCTION



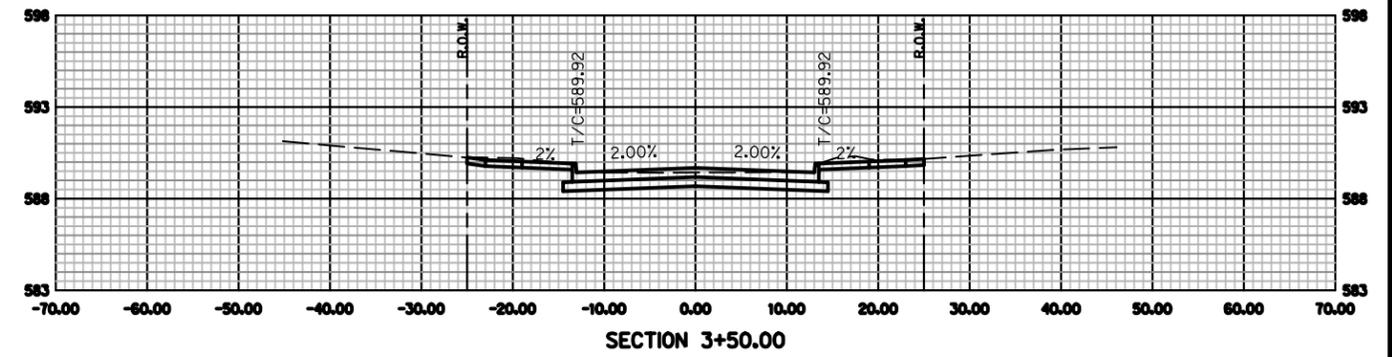
SECTION 2+00.00



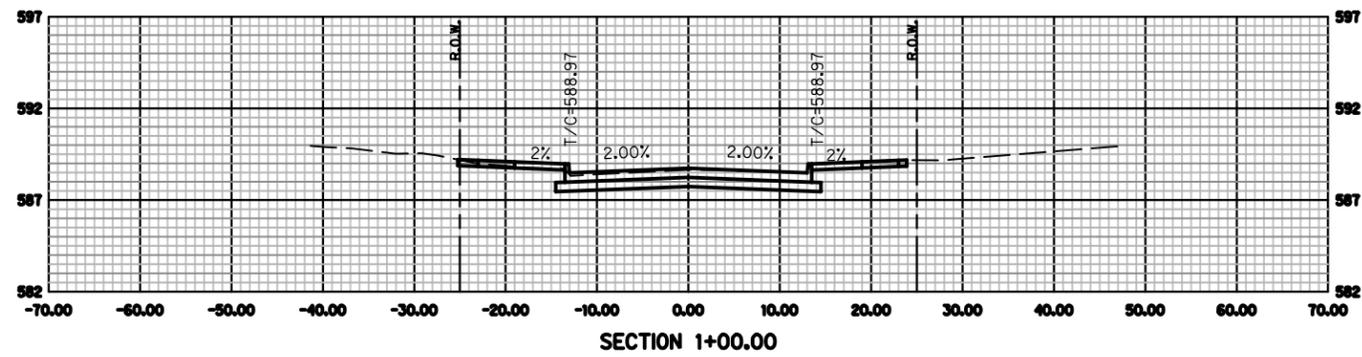
SECTION 4+00.00



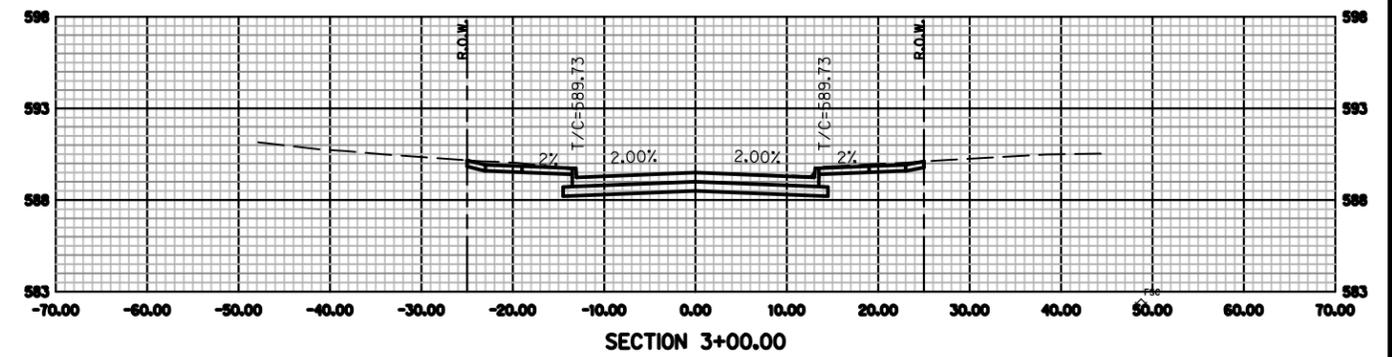
SECTION 1+50.00



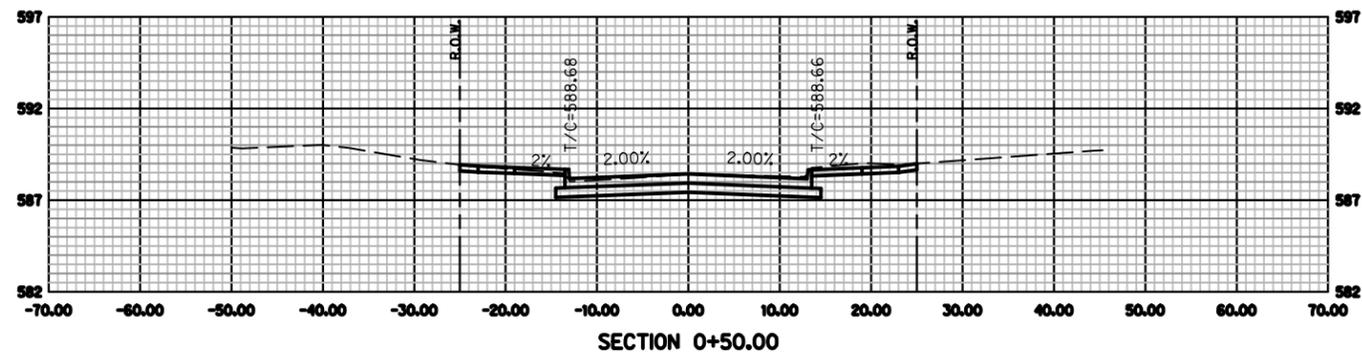
SECTION 3+50.00



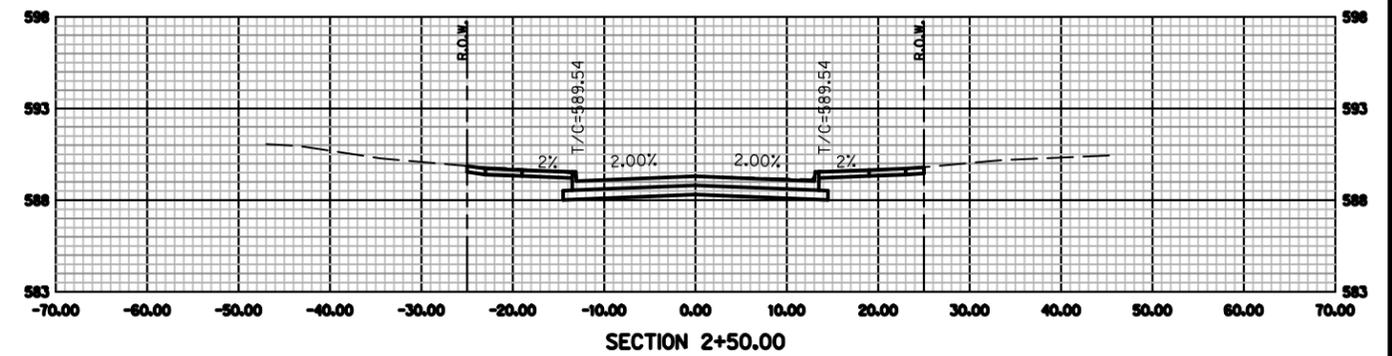
SECTION 1+00.00



SECTION 3+00.00



SECTION 0+50.00



SECTION 2+50.00

2/17/2015 2:31:53 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869XSRD05.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD05.dgn
CADD DRAWN	
B.L.M. CHECKED	



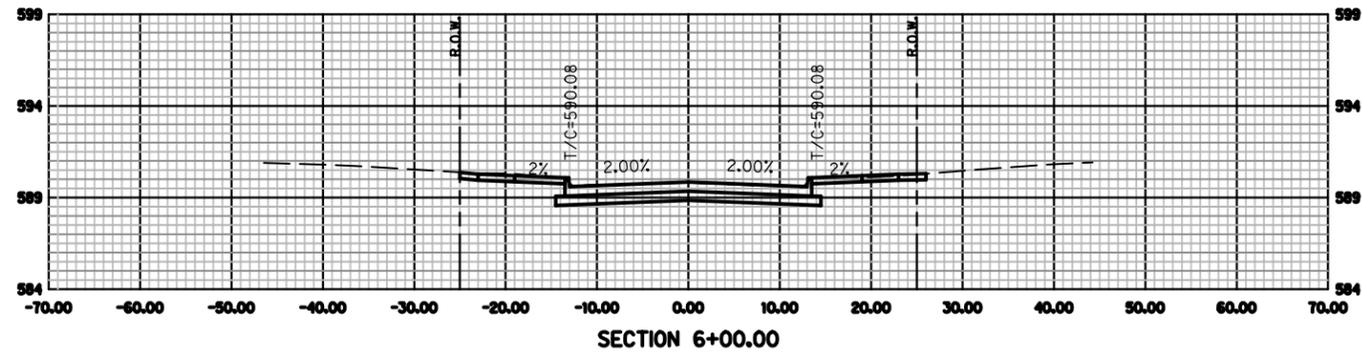
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



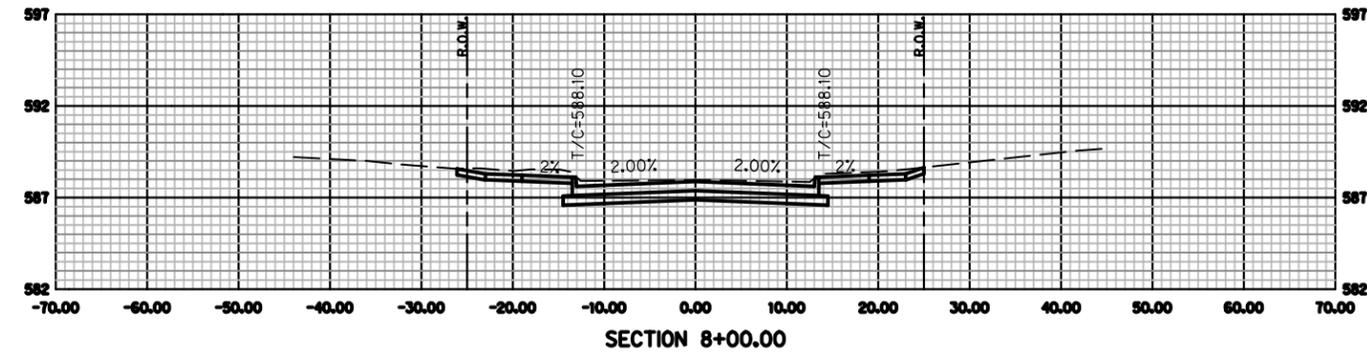
ROBERTS DRIVE
 CROSS SECTIONS
 STA 0+50.00 TO STA 4+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 52
CITY BID No.
 69-11-15-PHASE V

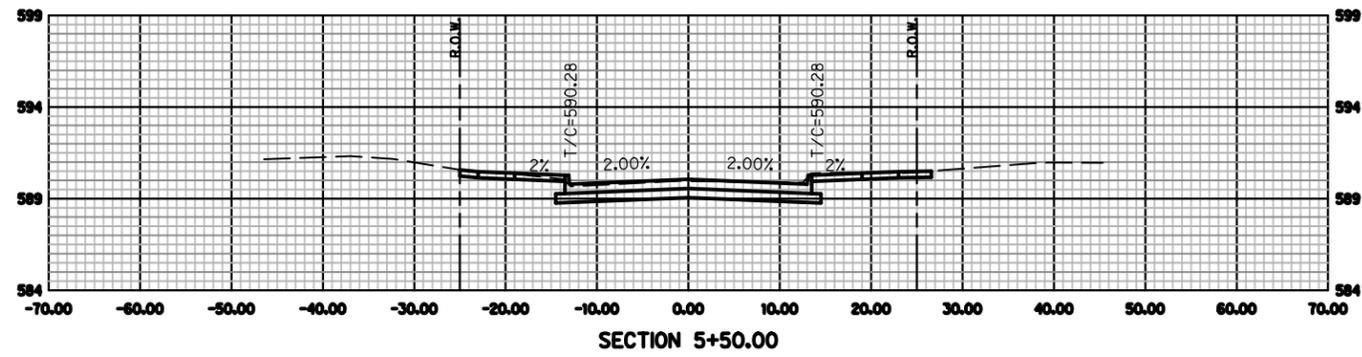
PHASE IV STREET RECONSTRUCTION



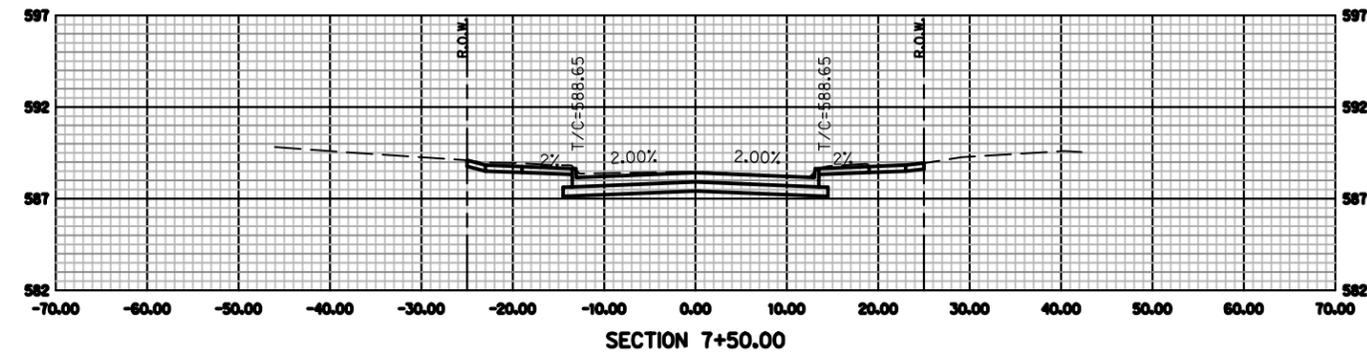
SECTION 6+00.00



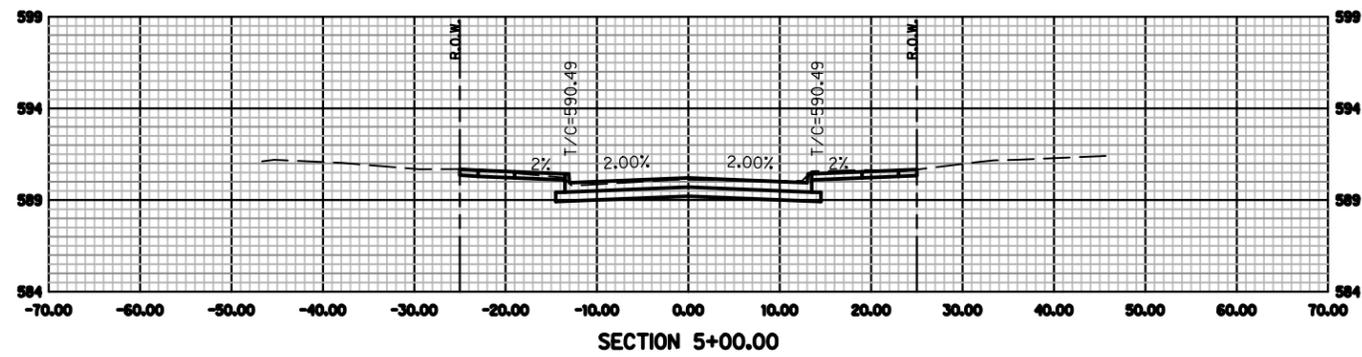
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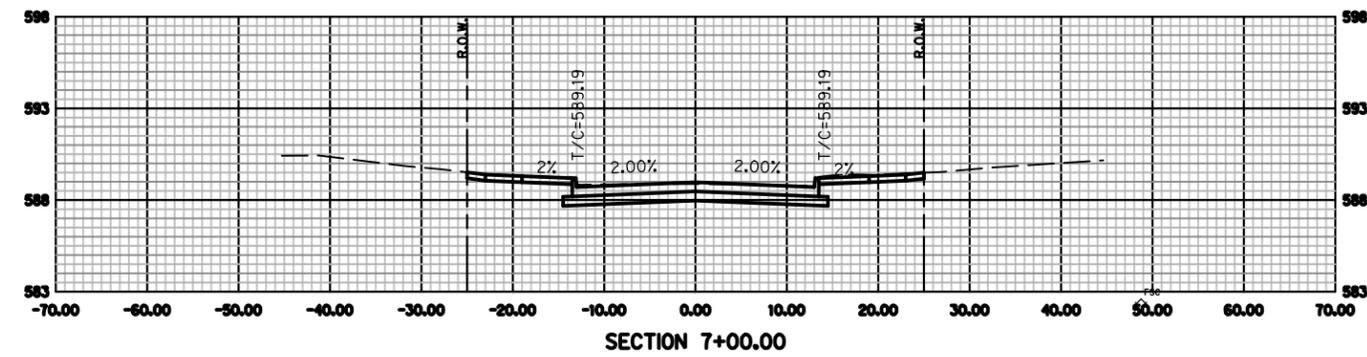
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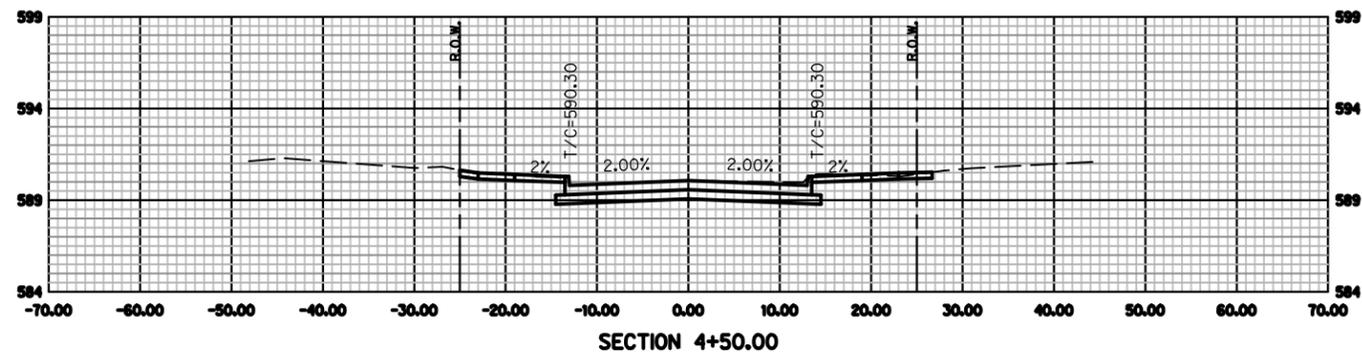
SECTION 7+50.00



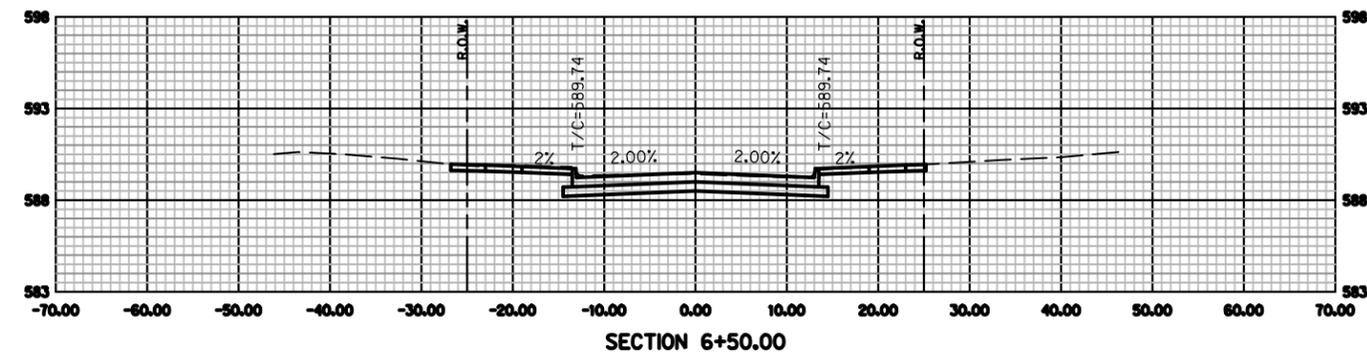
SECTION 5+00.00



SECTION 7+00.00



SECTION 4+50.00



SECTION 6+50.00

2/17/2015 2:31:55 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD06.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD06.dgn
CADD DRAWN	
B.L.M. CHECKED	

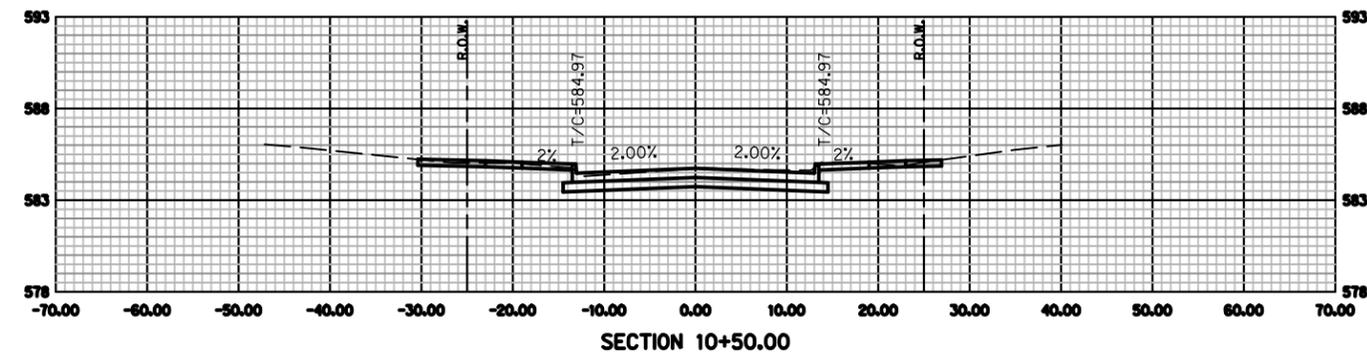
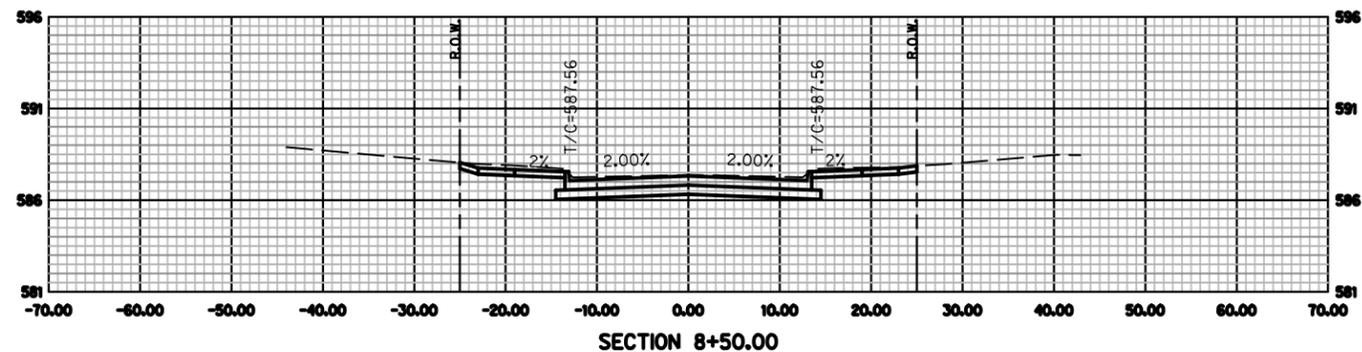
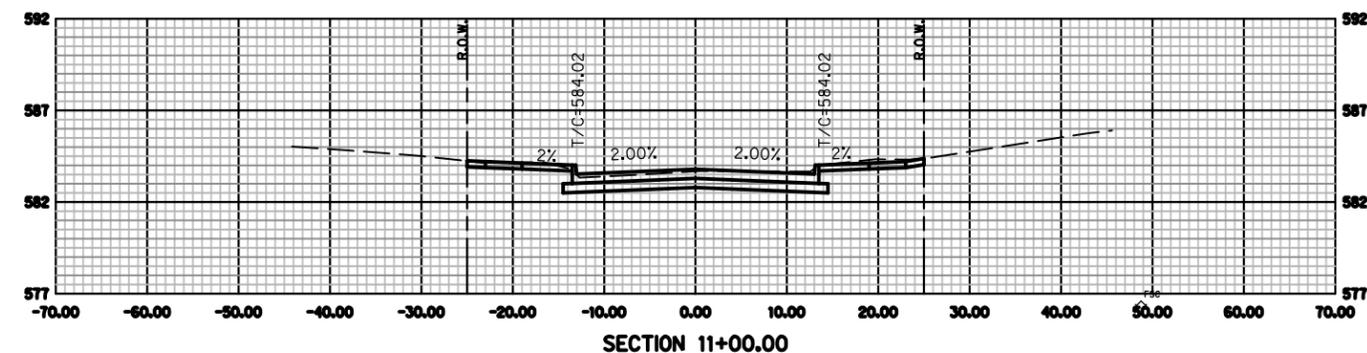
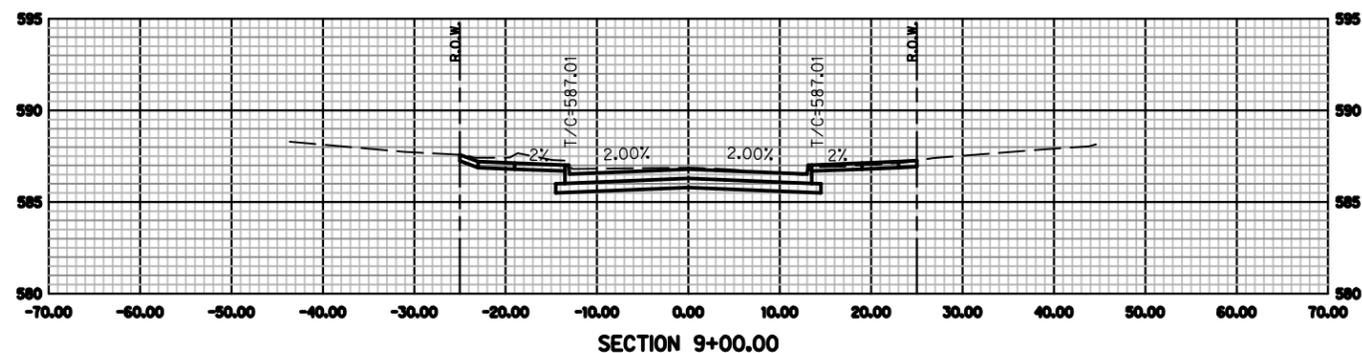
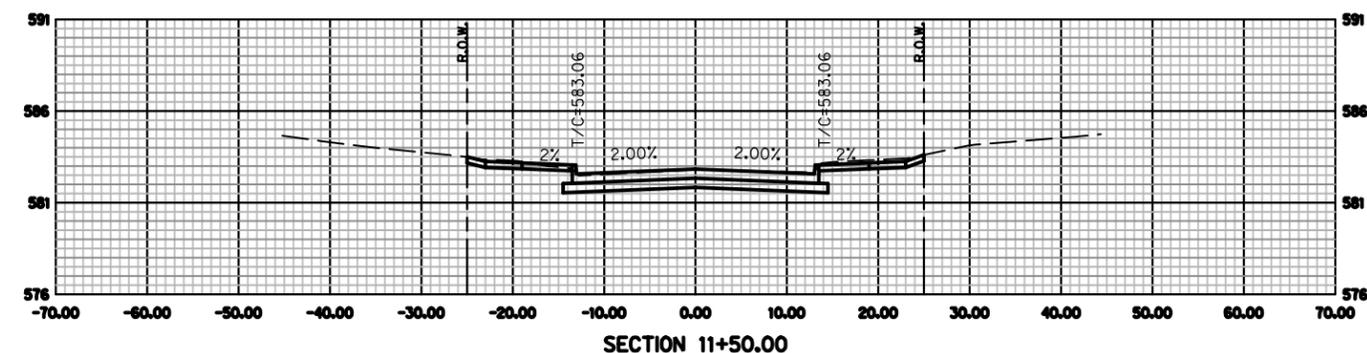
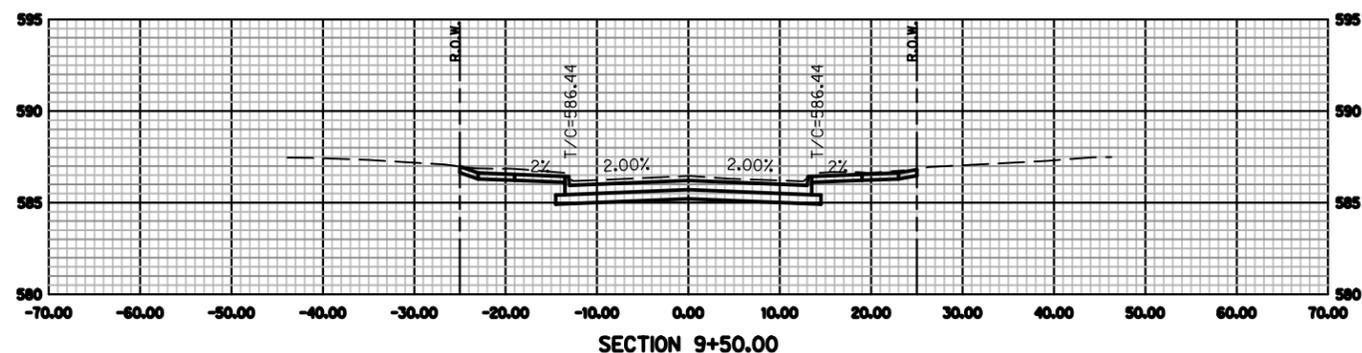
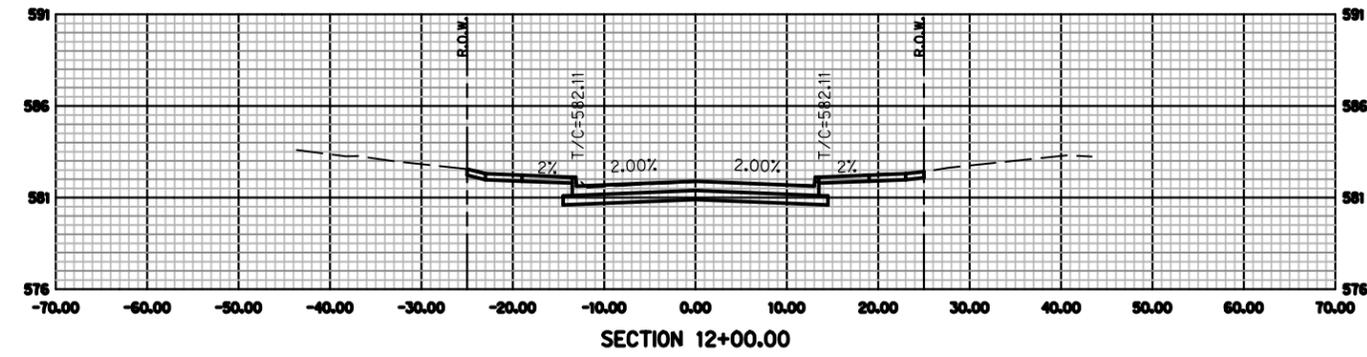
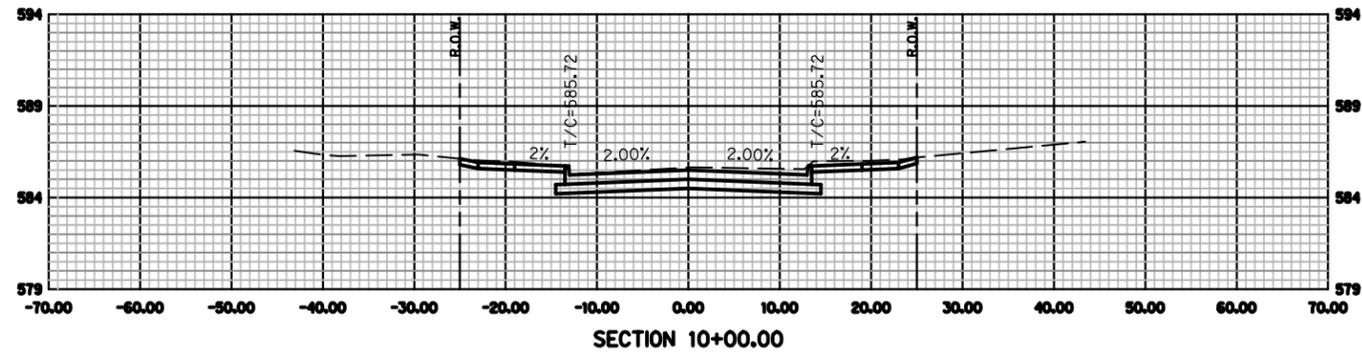


NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



ROBERTS DRIVE
 CROSS SECTIONS
 STA 4+50.00 TO STA 8+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 53
CITY BID No.
 69-11-15-PHASE V



2/17/2015 2:31:56 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD07.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD07.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



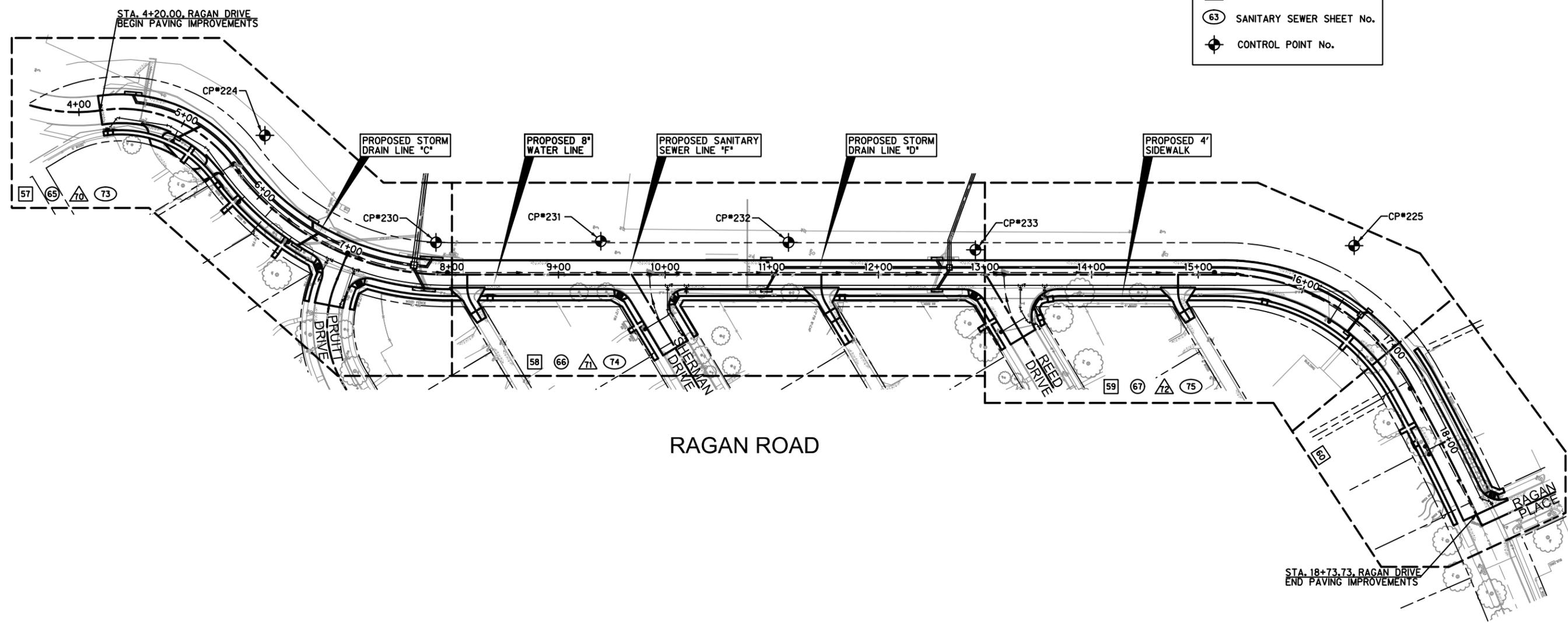
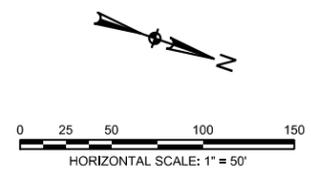
ROBERTS DRIVE
 CROSS SECTIONS
 STA 8+50.00 TO STA 12+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 54
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

LEGEND

- SHEET LIMITS
- 99+00 CENTERLINE PAVING IMPROVEMENTS
- PAVING SHEET No.
- DRAINAGE SHEET No.
- WATER SHEET No.
- SANITARY SEWER SHEET No.
- CONTROL POINT No.



RAGAN ROAD

SURVEY CONTROL

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
224	7087356.81	2464258.18	563.62	1/2" SIR RED *TP* CAP
225	7088356.48	2464023.73	565.41	1/2" SIR RED *TP* CAP
230	7087541.11	2464300.75	562.22	1/2" SIR RED *TP* CAP
231	7087686.90	2464249.37	562.98	1/2" SIR RED *TP* CAP
232	7087853.76	2464193.24	564.39	1/2" SIR RED *TP* CAP
233	7088021.84	2464142.77	564.19	1/2" SIR RED *TP* CAP

CENTERLINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
4+20.00	7087203.04	2464286.21	PC, BEGIN RAGAN ROAD
5+61.42	7087337.30	2464294.70	PRC
7+95.83	7087561.07	2464325.77	PT
15+24.51	7088250.20	2464088.94	PC
17+37.30	7088449.01	2464129.44	PCC
18+73.73	7088547.02	2464224.29	END RAGAN ROAD

2/17/2015 2:31:59 PM ah2789 HALF I:\30000s\30537\CADD\Sheets\27869PROJ01.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PROJ01.dgn

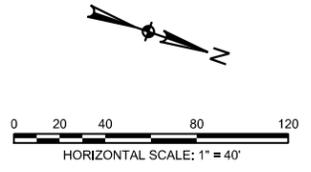
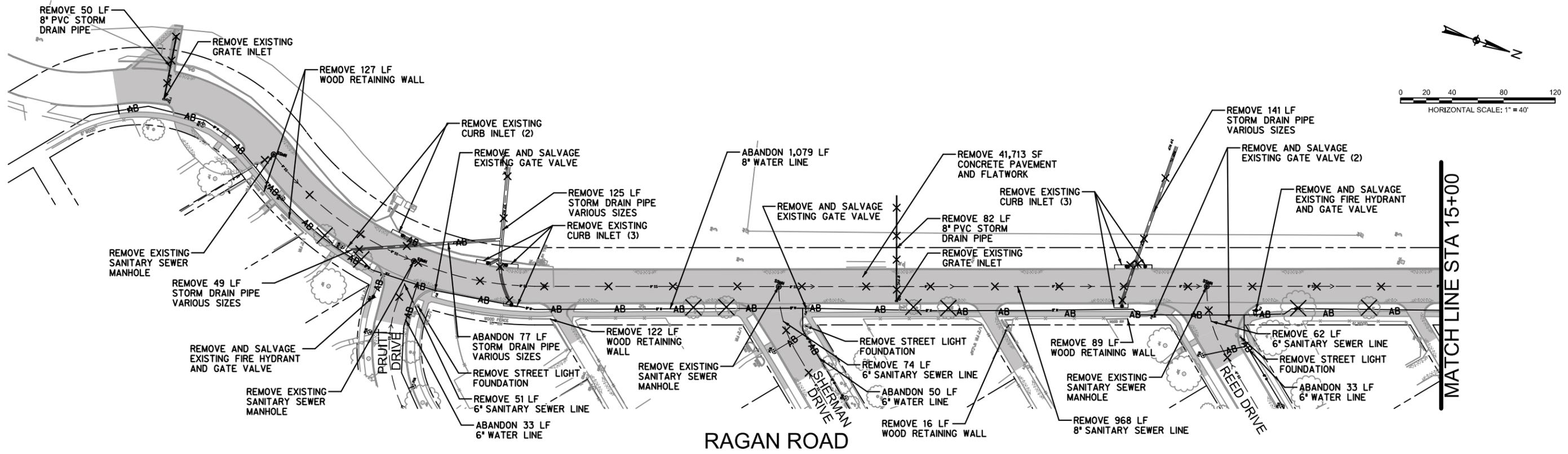
RAGAN ROAD
PROJECT LAYOUT

PHASE V STREET
RECONSTRUCTION

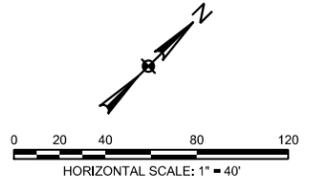
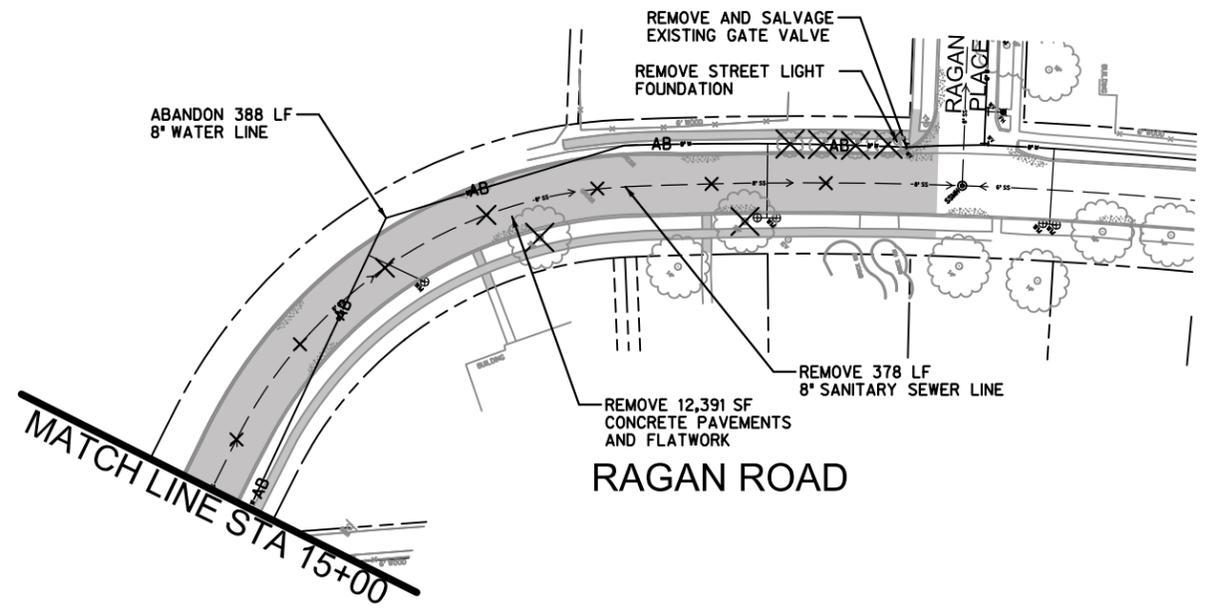
SHEET
55

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



MATCH LINE STA 15+00



GENERAL NOTES:

1. CONCRETE FLATWORK REMOVAL INCLUDES CONCRETE PAVEMENT, DRIVEWAYS, SIDEWALKS & FLUMES.
 2. ALL WATER METERS SHALL BE SALVAGED AND REUSED; ALL METER BOXES SHALL BE REMOVED.
 3. EXISTING UTILITY NOT TO BE ABANDONED OR REMOVED UNTIL PROPOSED UTILITY HAS BEEN COMPLETED AND IN SERVICE.
 4. REMOVAL OF TREES LESS THAN 12 INCHES IN DIAMETER ARE CONSIDERED SUBSIDIARY TO ROW PREP.
- * TREES SHOWN TO BE REMOVED ARE FOR BIDDING PURPOSES ONLY. ACTUAL NUMBER OF TREES TO BE REMOVED SHALL BE DETERMINED IN THE FIELD DURING CONSTRUCTION BY CITY INSPECTORS.

LEGEND

- CONCRETE FLATWORK REMOVAL
- UNDERGROUND UTILITY REMOVAL
- UNDERGROUND UTILITY ABANDONED IN PLACE
- TREE TO BE REMOVED*

2/17/2015 2:32:02 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869REMOV01.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869REMOV01.dgn

FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



RAGAN ROAD
 REMOVAL PLAN

PHASE V STREET
 RECONSTRUCTION

SHEET
 56

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

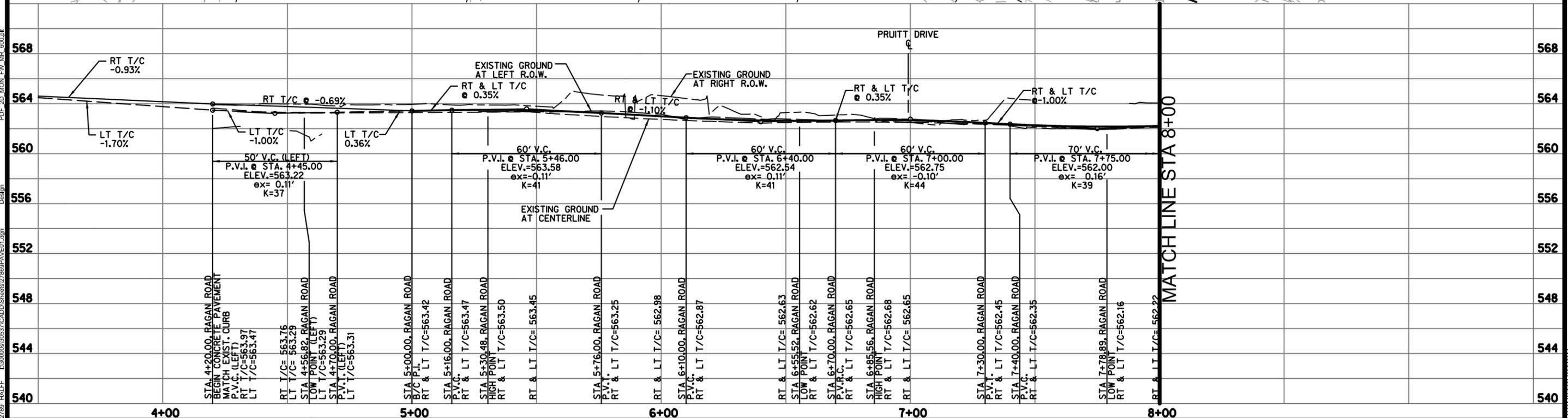
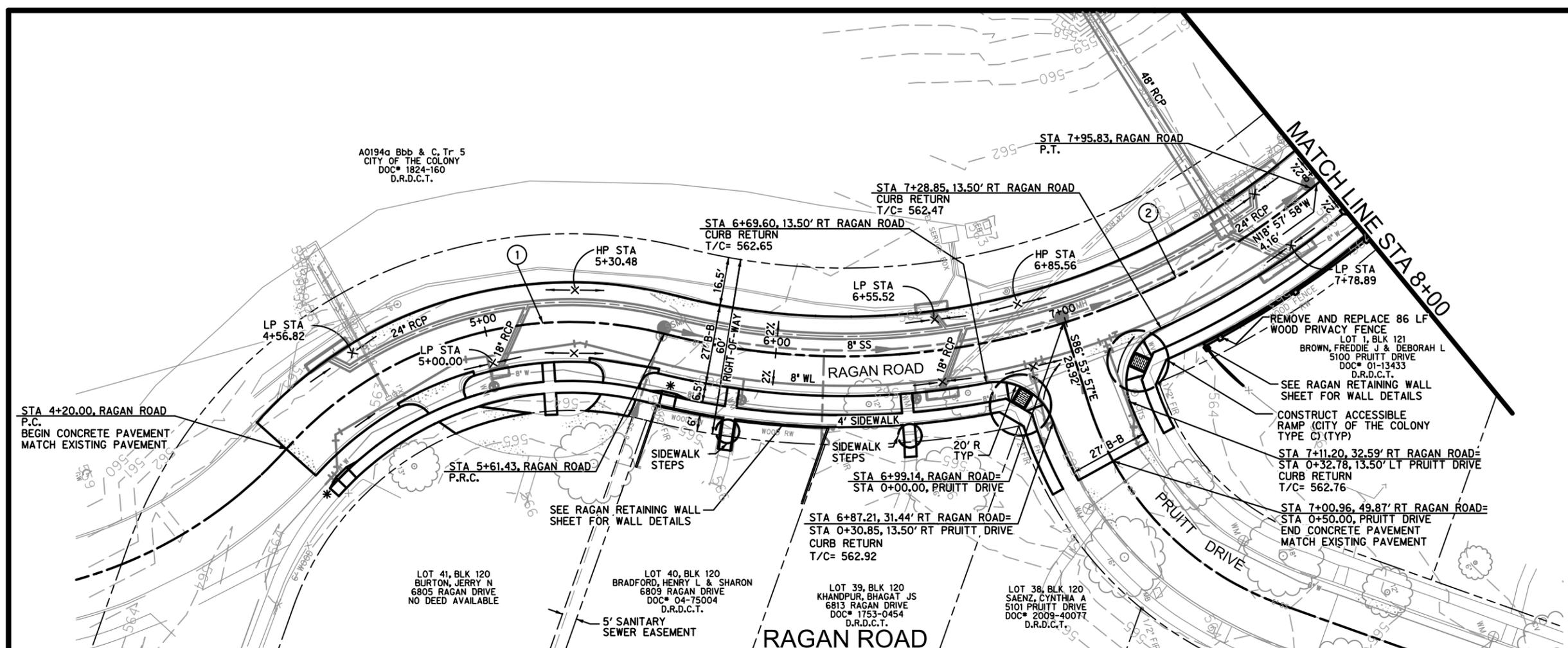
- ① Δ=62° 20' 4"
R=130.00'
L=141.43'
T=78.63'
CB=S 3° 36' 37" W
CL=134.56'
- ② Δ=53° 43' 15"
R=250.00'
L=234.40'
T=126.62'
CB=S 7° 54' 20" W
CL=225.91'

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

FENCES SHOWN TO BE REMOVED AND REPLACED ARE FOR ESTIMATION PURPOSES ONLY. ACTUAL FENCE REMOVALS SHALL BE DETERMINED IN THE FIELD AND AT THE DIRECTION OF CITY INSPECTOR.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	HORIZ. : 1" = 20'
B.L.M. CHECKED	VERT. : 1" = 4'
	AVO: 30537
	FILE: 27869PAVE01.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784

STATE OF TEXAS
LEIGH A. HOLLIS
103573
LICENSED PROFESSIONAL ENGINEER

NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

RAGAN ROAD
PLAN AND PROFILE
STA 4+20 TO STA 8+00

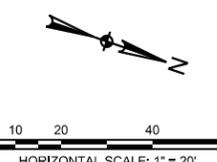
PHASE V STREET RECONSTRUCTION

SHEET
57

CITY BID No.
69-11-15-PHASE V

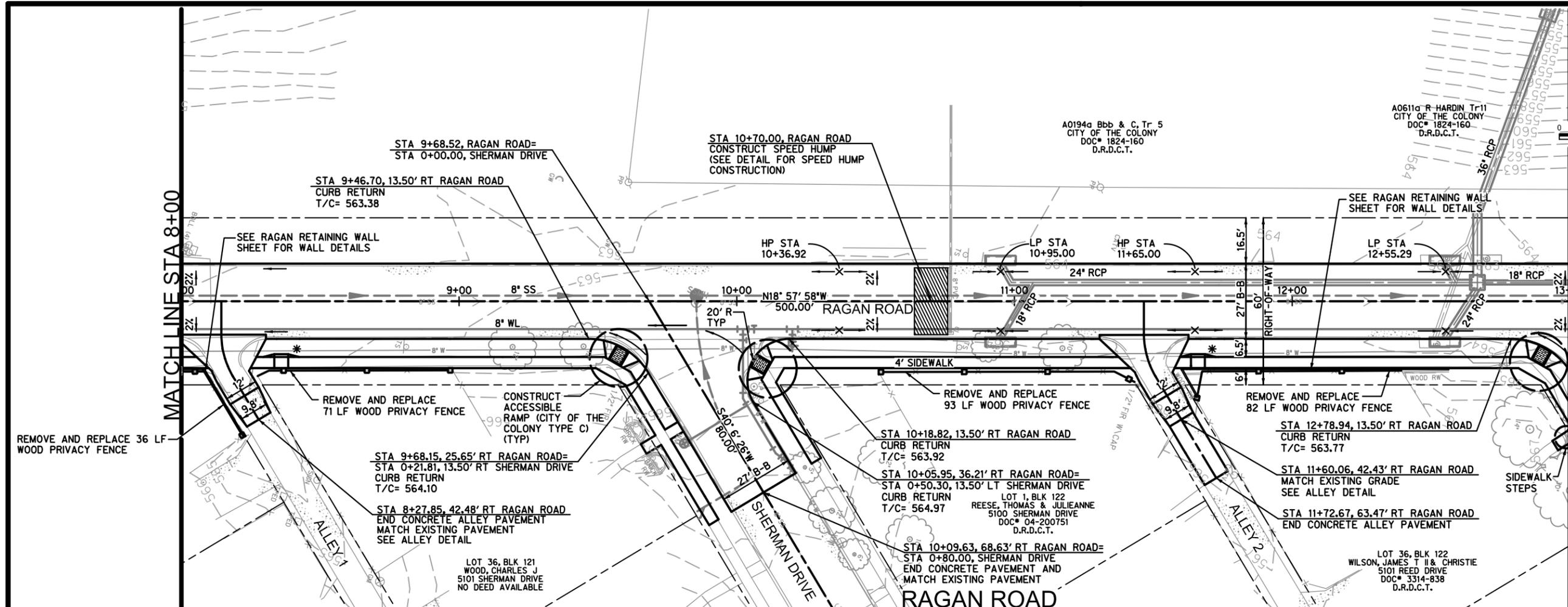
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PHASE IV STREET RECONSTRUCTION



MATCH LINE STA 8+00

MATCH LINE STA 13+00

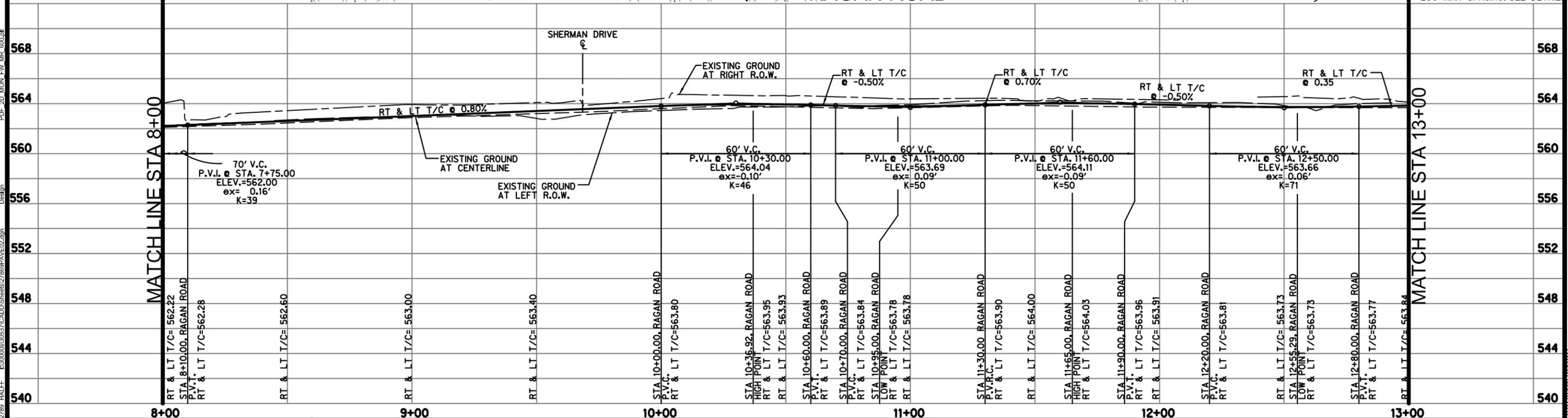


NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

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* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE02.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



RAGAN ROAD
 PLAN AND PROFILE
 STA 8+00 TO STA 13+00

PHASE V STREET RECONSTRUCTION

SHEET
58

CITY BID No.
69-11-15-PHASE V

2/17/2015 2:32:08 PM ah2789 HALFF R:\3000s\30537\CADD\Sheets\27869PAVE02.dgn



CURVE DATA

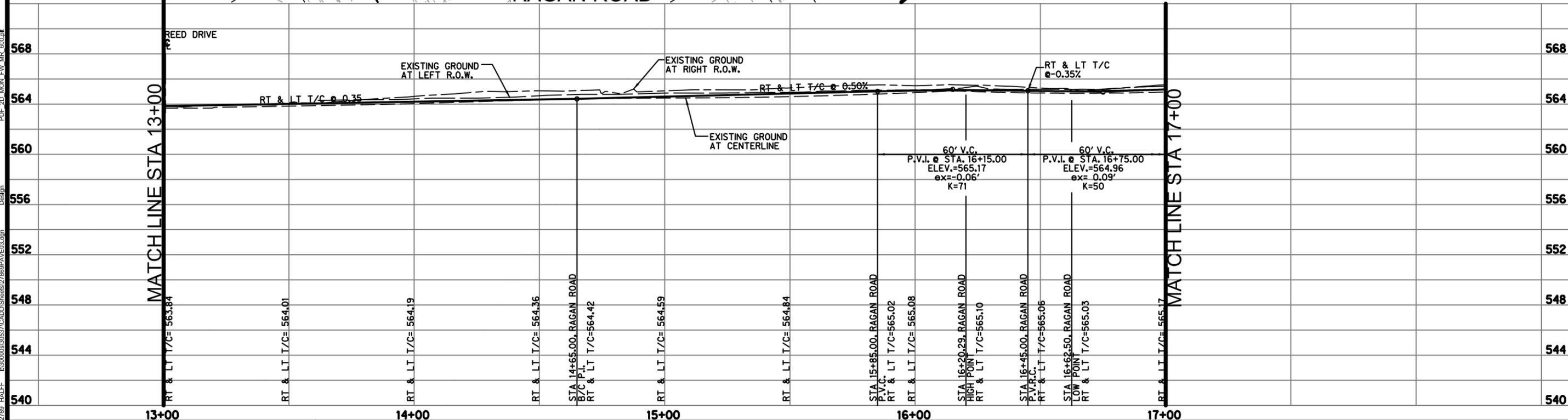
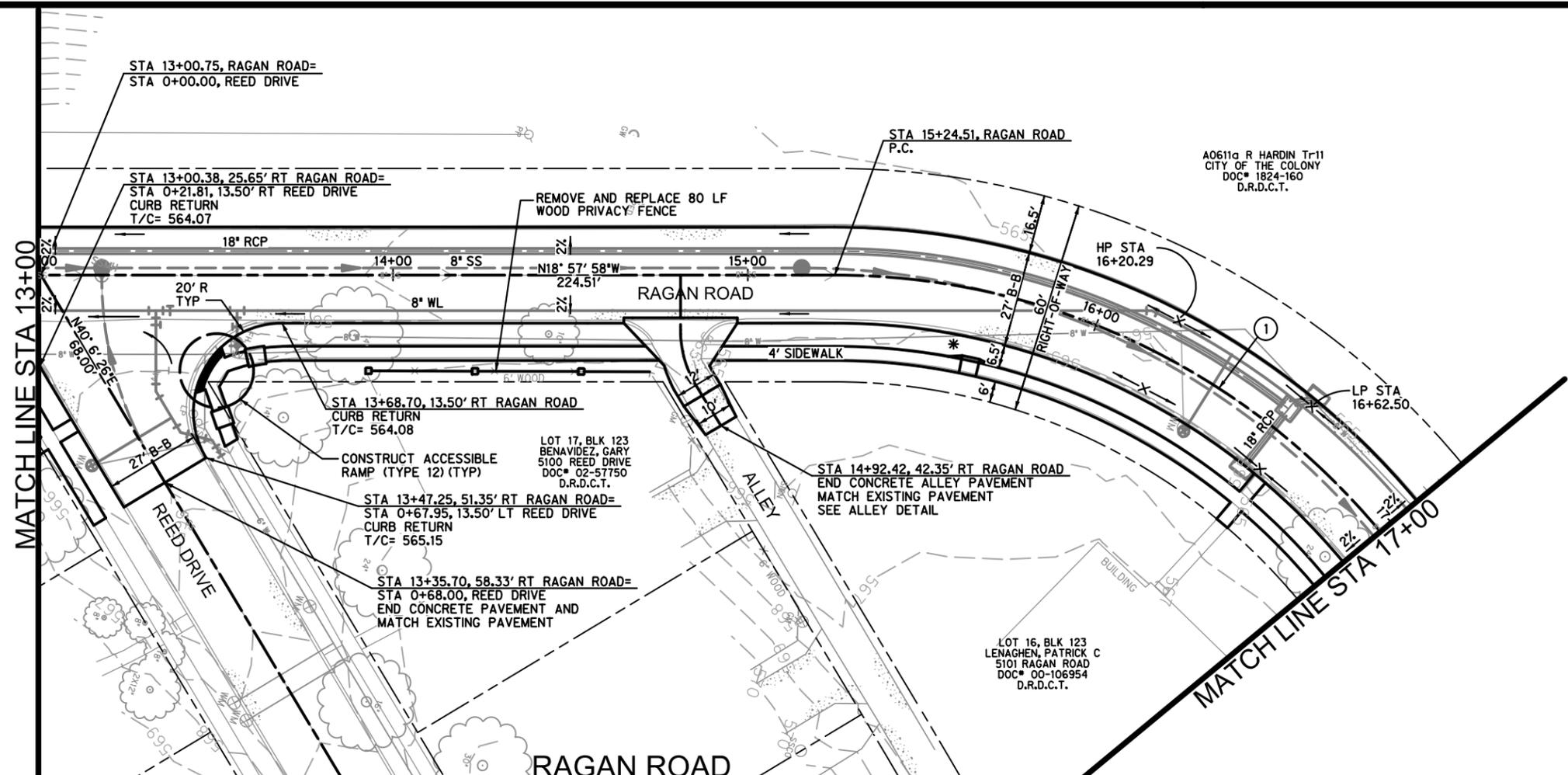
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R=200.00'
L=212.79'
T=117.71'
CB=S 11° 30' 48" W
CL=202.89'

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

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* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



2/17/2015 2:32:10 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PAVE03.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE03.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

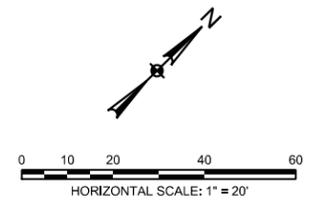
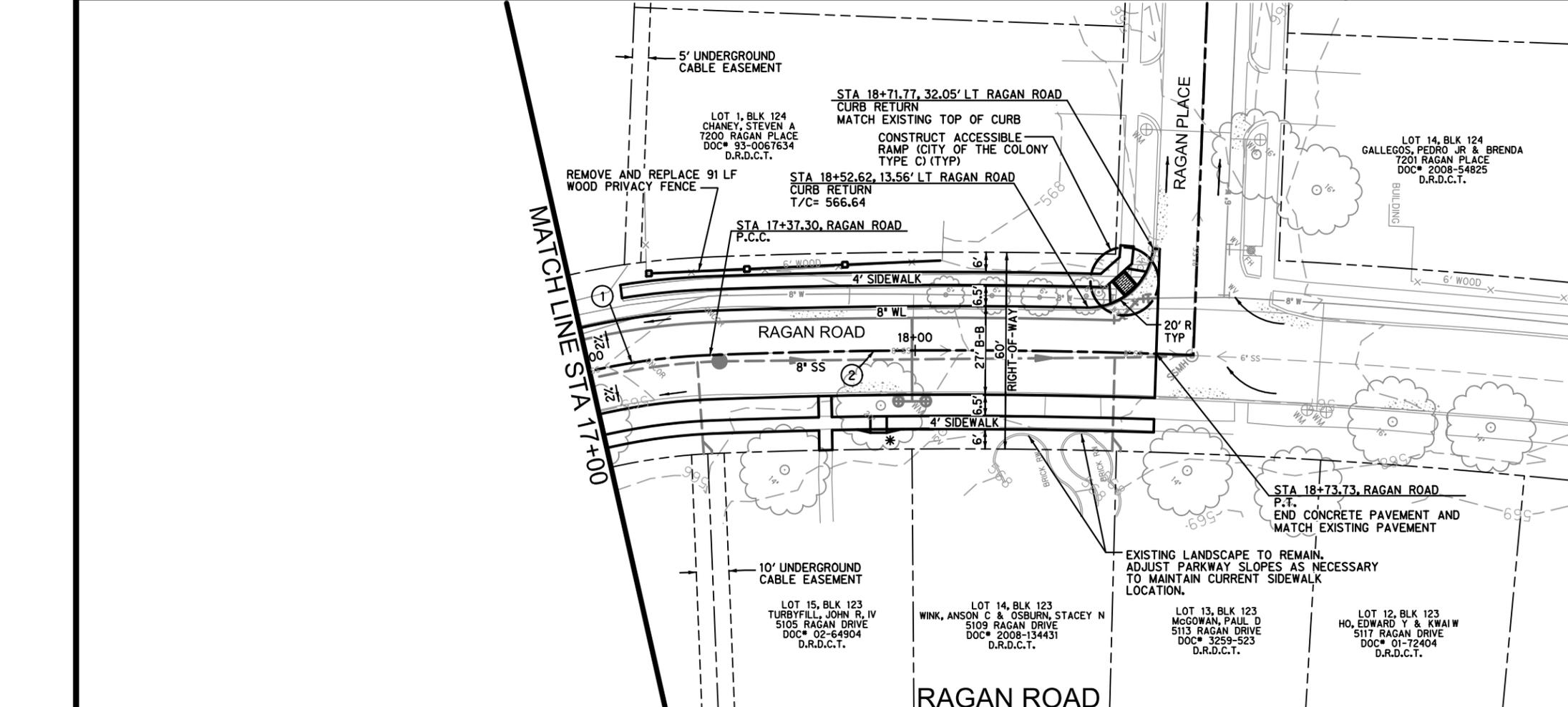
RAGAN ROAD
 PLAN AND PROFILE
 STA 13+00 TO STA 17+00

PHASE V STREET
 RECONSTRUCTION

SHEET
59

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

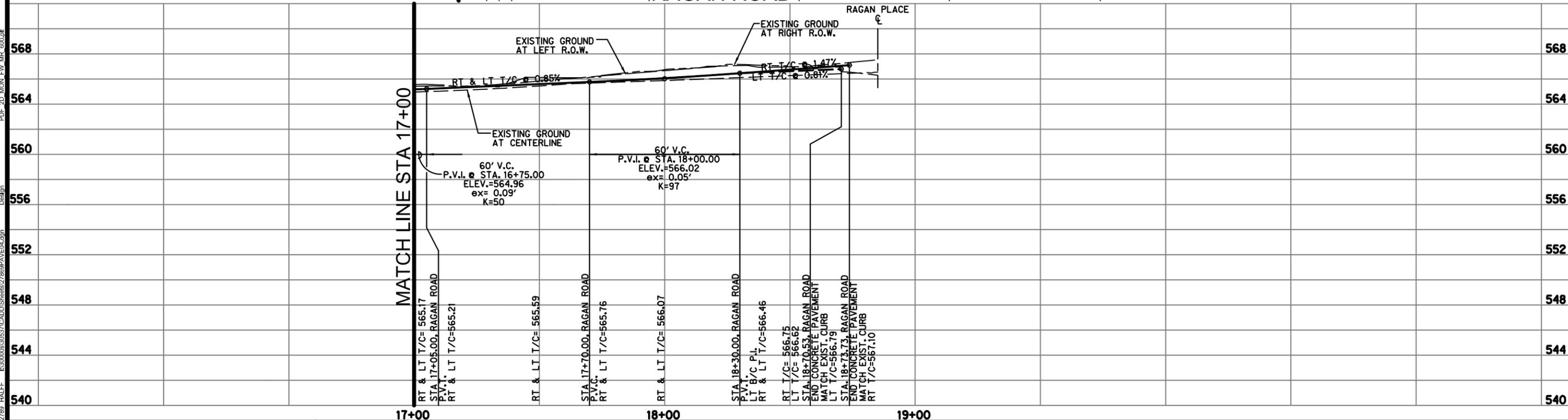
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	R=200.00'
	L=212.79'
	T=117.71'
	CB=S 11° 30' 48" W
	CL=202.89'
②	A=4° 8' 9"
	R=1890.00'
	L=136.43'
	T=68.24'
	CB=N 44° 3' 39" E
	CL=136.40'

NOTES:

SIDEWALK RETAINING WALLS LESS THAN ONE FOOT IN HEIGHT MAY BE NECESSARY WHERE EXISTING FENCES ARE ADJACENT TO SIDEWALKS. EXACT LENGTHS AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CITY INSPECTORS DURING SIDEWALK CONSTRUCTION.

FENCES SHOWN TO BE REMOVED AND REPLACED ARE FOR ESTIMATION PURPOSES ONLY. ACTUAL FENCE REMOVALS SHALL BE DETERMINED IN THE FIELD AND AT THE DIRECTION OF CITY INSPECTOR.

* 5'x5' SIDEWALK PASS LANES SHALL BE CONSTRUCTED AT 200' MAX SPACING. SEE DETAIL.



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869PAVE04.dgn
CADD DRAWN	
B.L.M. CHECKED	

RAGAN ROAD
PLAN AND PROFILE
STA 17+00 TO END

PHASE V STREET
RECONSTRUCTION

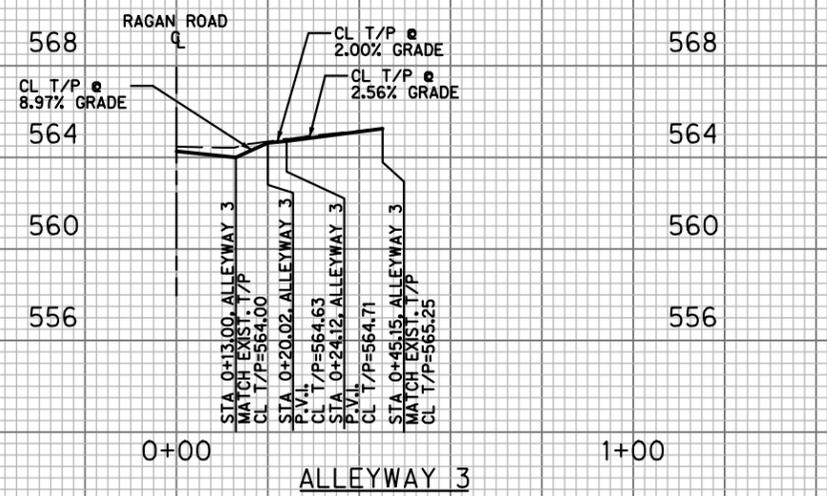
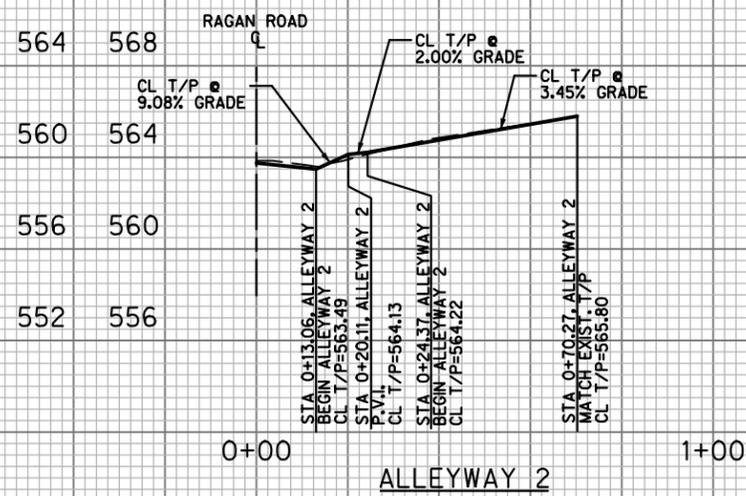
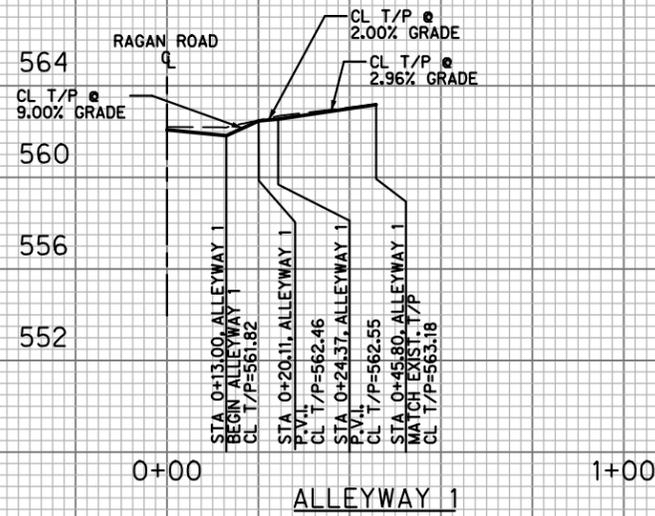
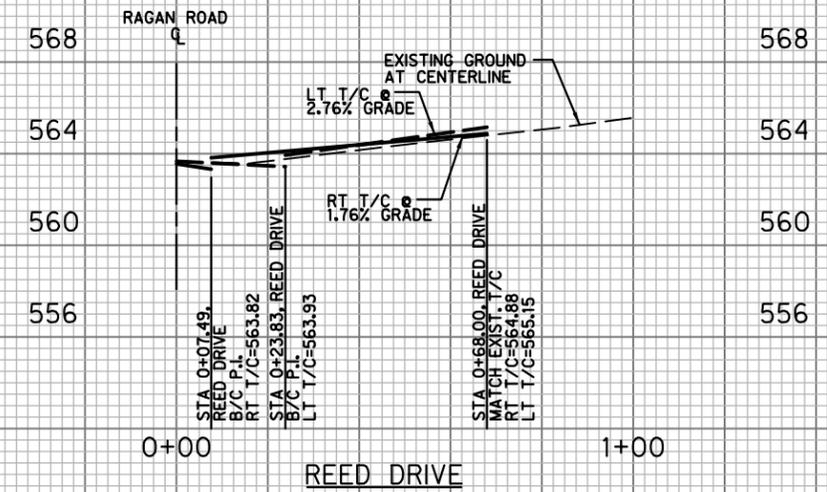
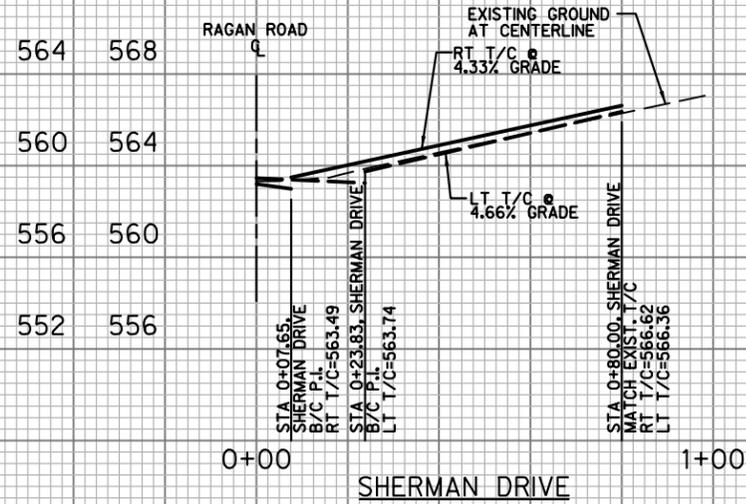
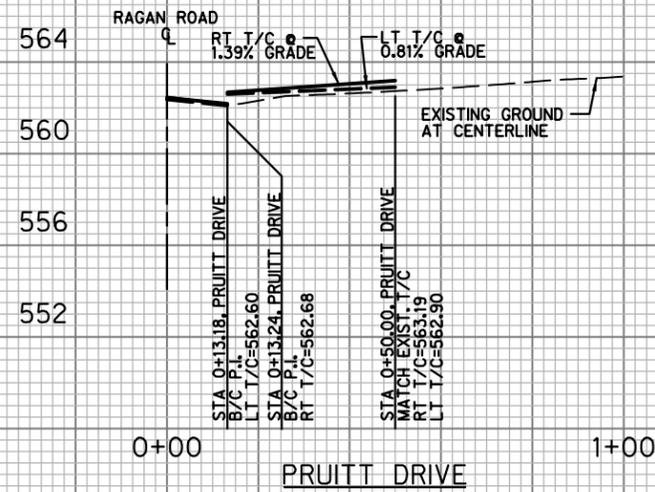
SHEET
60

CITY BID No.
69-11-15-PHASE V

2/17/2015 2:32:12 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869PAVE04.dgn

PHASE IV STREET RECONSTRUCTION

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 2789PAVE54.dgn
CADD DRAWN	
B.L.M. CHECKED	

NAME: *Leslie A. Hollis*
DATE: 2/20/15
TBPE FIRM *F-312

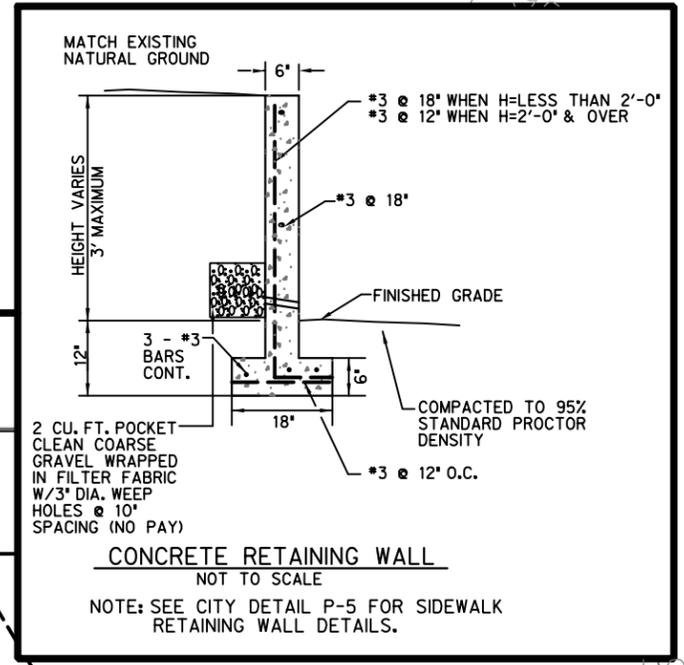
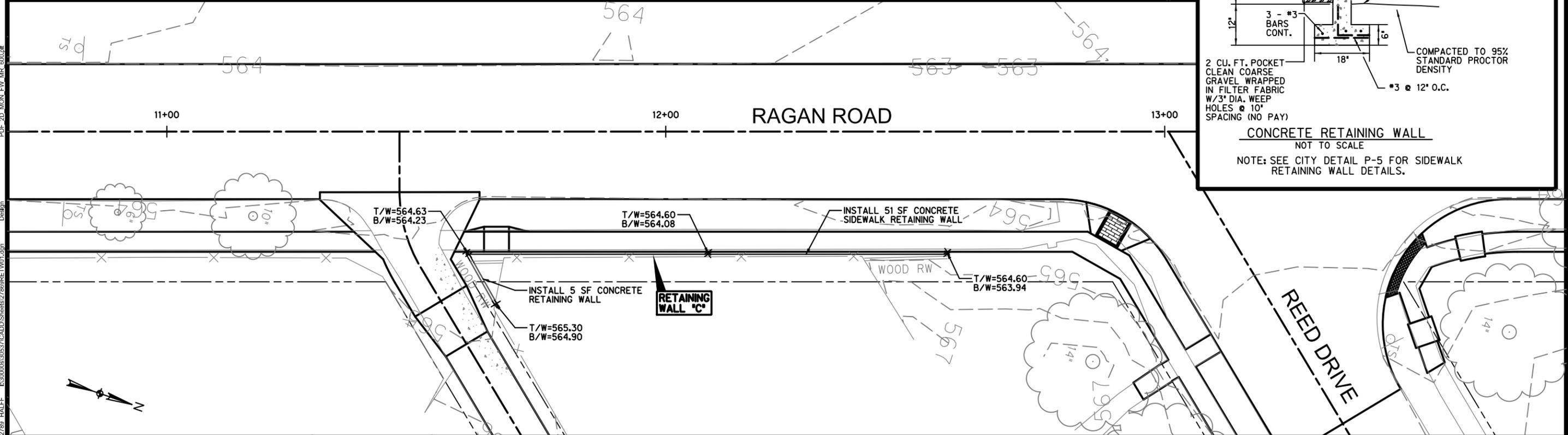
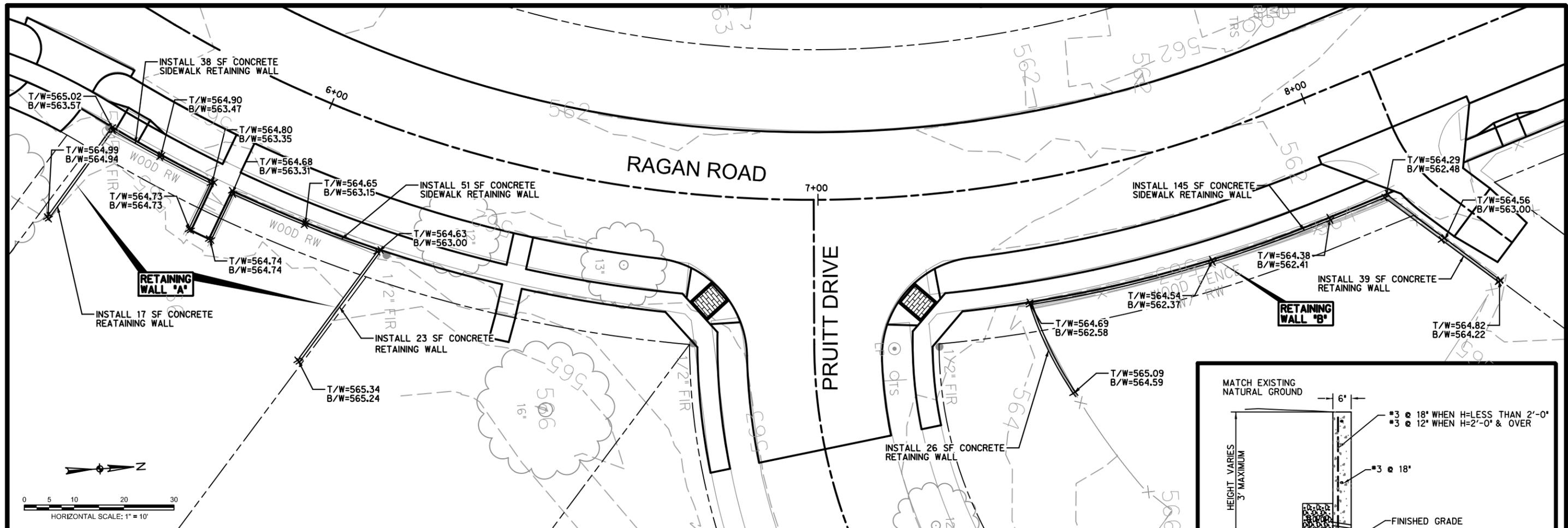
RAGAN ROAD
SIDE STREET PROFILES

PHASE V STREET
RECONSTRUCTION

SHEET
61

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	
B.L.M. CHECKED	
AVO: 30537 FILE: 27869RETW01.dgn	

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



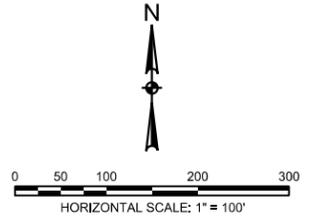
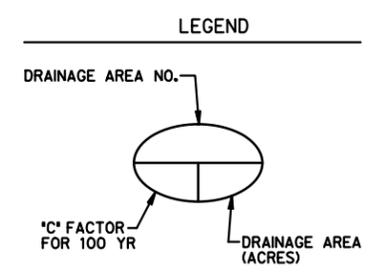
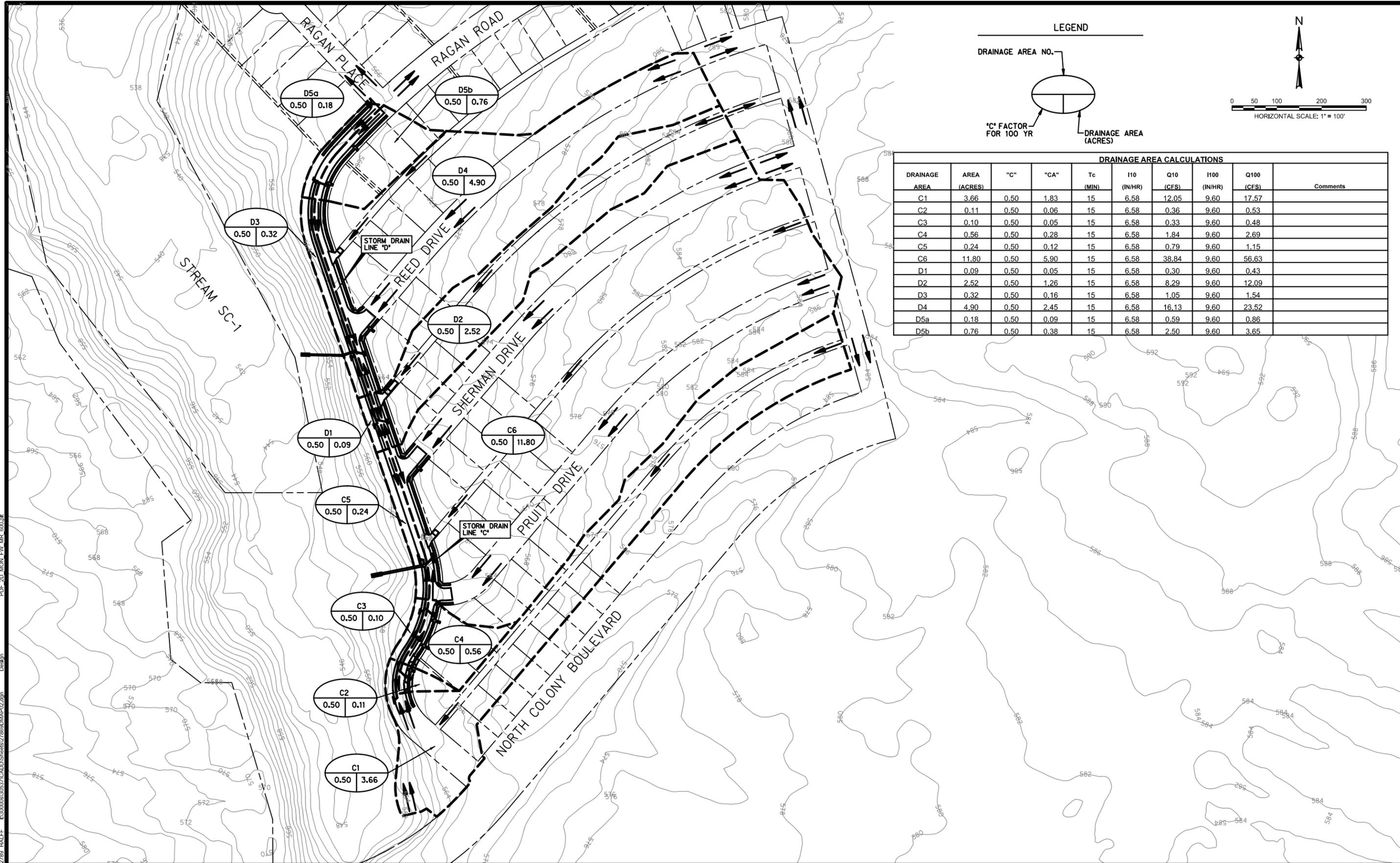
NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312



RAGAN ROAD
RETAINING WALLS
PHASE V STREET
RECONSTRUCTION

SHEET
62
CITY BID No.
69-11-15-PHASE V

2/17/2015 2:32:17 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869RETW01.dgn Design



DRAINAGE AREA CALCULATIONS									
DRAINAGE AREA	AREA (ACRES)	"C"	"CA"	T _c (MIN)	I10 (IN/HR)	Q10 (CFS)	I100 (IN/HR)	Q100 (CFS)	Comments
C1	3.66	0.50	1.83	15	6.58	12.05	9.60	17.57	
C2	0.11	0.50	0.06	15	6.58	0.36	9.60	0.53	
C3	0.10	0.50	0.05	15	6.58	0.33	9.60	0.48	
C4	0.56	0.50	0.28	15	6.58	1.84	9.60	2.69	
C5	0.24	0.50	0.12	15	6.58	0.79	9.60	1.15	
C6	11.80	0.50	5.90	15	6.58	38.84	9.60	56.63	
D1	0.09	0.50	0.05	15	6.58	0.30	9.60	0.43	
D2	2.52	0.50	1.26	15	6.58	8.29	9.60	12.09	
D3	0.32	0.50	0.16	15	6.58	1.05	9.60	1.54	
D4	4.90	0.50	2.45	15	6.58	16.13	9.60	23.52	
D5a	0.18	0.50	0.09	15	6.58	0.59	9.60	0.86	
D5b	0.76	0.50	0.38	15	6.58	2.50	9.60	3.65	

2/17/2015 2:32:24 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869DMAP02.dgn
 Design
 FILE: I:\30000s\30537\CADD\Sheets\27869DMAP02.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: I:\30000s\30537\CADD\Sheets\27869DMAP02.dgn

FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



NAME: Leigh A. Willis
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

RAGAN ROAD
 DRAINAGE AREA MAP
 PHASE V STREET
 RECONSTRUCTION

SHEET
 63
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

System C Inlets - (100-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
4+50.00 (LT)	C.L	C-1	3.66	0.50	9.60	17.57	-	17.57	27	0.02	0.0050	24.04	0.48	10.54	15	0.00	17.57		SAG
5+00.00 (RT)	C.L	C-2	0.11	0.50	9.60	0.53	-	0.53	27	0.02	0.0050	6.46	0.13	0.32	5	0.00	0.53		SAG
6+55.00 (LT)	C.L	C-3	0.10	0.50	9.60	0.48	-	0.48	27	0.02	0.0035	6.66	0.13	0.29	10	0.00	0.48		SAG
6+55.00 (RT)	C.L	C-4	0.56	0.50	9.60	2.69	-	2.69	27	0.02	0.0035	12.72	0.25	1.61	10	0.00	2.69		SAG
7+75.00 (LT)	C.L	C-5	6.02	0.50	9.60	28.89	-	28.89	27	0.02	0.0080	26.53	0.53	17.34	20	0.00	28.89		SAG
7+75.00 (RT)	C.L	C-6	6.02	0.50	9.60	28.89	-	28.89	27	0.02	0.0080	26.53	0.53	17.34	20	0.00	28.89		SAG

System C Inlets - (25-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
4+50.00 (LT)	C.L	C-1	3.66	0.50	7.65	13.99	-	13.99	27	0.02	0.0050	22.08	0.44	8.40	15	0.00	13.99		SAG
5+00.00 (RT)	C.L	C-2	0.11	0.50	7.65	0.42	-	0.42	27	0.02	0.0050	5.93	0.12	0.25	5	0.00	0.42		SAG
6+55.00 (LT)	C.L	C-3	0.10	0.50	7.65	0.38	-	0.38	27	0.02	0.0035	6.12	0.12	0.23	10	0.00	0.38		SAG
6+55.00 (RT)	C.L	C-4	0.56	0.50	7.65	2.14	-	2.14	27	0.02	0.0035	11.68	0.23	1.28	10	0.00	2.14		SAG
7+75.00 (LT)	C.L	C-5	6.02	0.50	7.65	23.01	-	23.01	27	0.02	0.0080	24.36	0.49	13.81	20	0.00	23.01		SAG
7+75.00 (RT)	C.L	C-6	6.02	0.50	7.65	23.01	-	23.01	27	0.02	0.0080	24.36	0.49	13.81	20	0.00	23.01		SAG

System C Inlets - (10-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
4+50.00 (LT)	C.L	C-1	3.66	0.50	6.58	12.05	-	12.05	27	0.02	0.0050	20.87	0.42	7.23	15	0.00	12.05		SAG
5+00.00 (RT)	C.L	C-2	0.11	0.50	6.58	0.36	-	0.36	27	0.02	0.0050	5.61	0.11	0.22	5	0.00	0.36		SAG
6+55.00 (LT)	C.L	C-3	0.10	0.50	6.58	0.33	-	0.33	27	0.02	0.0035	5.79	0.12	0.20	10	0.00	0.33		SAG
6+55.00 (RT)	C.L	C-4	0.56	0.50	6.58	1.84	-	1.84	27	0.02	0.0035	11.04	0.22	1.11	10	0.00	1.84		SAG
7+75.00 (LT)	C.L	C-5	6.02	0.50	6.58	19.82	-	19.82	27	0.02	0.0080	23.03	0.46	11.89	20	0.00	19.82		SAG
7+75.00 (RT)	C.L	C-6	6.02	0.50	6.58	19.82	-	19.82	27	0.02	0.0080	23.03	0.46	11.89	20	0.00	19.82		SAG

System D Inlets - (100-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
10+95.00 (LT)	C.L	D-1	1.30	0.50	9.60	6.24	-	6.24	27	0.02	0.0050	16.31	0.33	3.74	10	0.00	6.24		SAG
10+95.00 (RT)	C.L	D-2	1.30	0.50	9.60	6.24	-	6.24	27	0.02	0.0050	16.31	0.33	3.74	10	0.00	6.24		SAG
12+55.00 (LT)	C.L	D-3	2.60	0.50	9.60	12.48	-	12.48	27	0.02	0.0035	22.61	0.45	7.49	10	0.00	12.48		SAG
12+55.00 (RT)	C.L	D-4	2.60	0.50	9.60	12.48	-	12.48	27	0.02	0.0035	22.61	0.45	7.49	10	0.00	12.48		SAG
16+58.00 (RT)	C.L	D-5b	0.76	0.50	9.60	3.65	-	3.65	27	0.02	0.0035	14.26	0.29	2.19	5	0.00	3.65		SAG
16+62.00 (LT)	C.L	D-5	0.18	0.50	9.60	0.86	-	0.86	27	0.02	0.0035	8.31	0.17	0.52	5	0.00	0.86		SAG

System D Inlets - (25-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
10+95.00 (LT)	C.L	D-1	1.30	0.50	7.65	4.97	-	4.97	27	0.02	0.0050	14.98	0.30	2.98	10	0.00	4.97		SAG
10+95.00 (RT)	C.L	D-2	1.30	0.50	7.65	4.97	-	4.97	27	0.02	0.0050	14.98	0.30	2.98	10	0.00	4.97		SAG
12+55.00 (LT)	C.L	D-3	2.60	0.50	7.65	9.94	-	9.94	27	0.02	0.0035	20.77	0.42	5.96	10	0.00	9.94		SAG
12+55.00 (RT)	C.L	D-4	2.60	0.50	7.65	9.94	-	9.94	27	0.02	0.0035	20.77	0.42	5.96	10	0.00	9.94		SAG
16+58.00 (RT)	C.L	D-5b	0.76	0.50	7.65	2.91	-	2.91	27	0.02	0.0035	13.09	0.26	1.74	5	0.00	2.91		SAG
16+62.00 (LT)	C.L	D-5	0.18	0.50	7.65	0.69	-	0.69	27	0.02	0.0035	7.63	0.15	0.41	5	0.00	0.69		SAG

System D Inlets - (10-YR)

INLET		DRAINAGE AREA				FLOW				STRAIGHT CROSS SLOPE					INLET LENGTH		CARRYOVER DESIGN POINT ID	NOTES	
STATION	TYPE	D.A. NO.	AREA A ACRES	RUN COEF C	INTENSITY I IN/HR	STREET Q S CFS	CARRYOVER Q CO CFS	TOTAL Q T CFS	SECTION WIDTH (B-B) FT	S X FT/FT	S L FT/FT	T FT	d FT	L R FT	L A FT	CARRYOVER Q CO CFS			INTERCEPT Q I CFS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28
10+95.00 (LT)	C.L	D-1	1.30	0.50	6.58	4.28	-	4.28	27	0.02	0.0050	14.16	0.28	2.57	10	0.00	4.28		SAG
10+95.00 (RT)	C.L	D-2	1.30	0.50	6.58	4.28	-	4.28	27	0.02	0.0050	14.16	0.28	2.57	10	0.00	4.28		SAG
12+55.00 (LT)	C.L	D-3	2.60	0.50	6.58	8.56	-	8.56	27	0.02	0.0035	19.63	0.39	5.13	10	0.00	8.56		SAG
12+55.00 (RT)	C.L	D-4	2.60	0.50	6.58	8.56	-	8.56	27	0.02	0.0035	19.63	0.39	5.13	10	0.00	8.56		SAG
16+58.00 (RT)	C.L	D-5b	0.76	0.50	6.58	2.50	-	2.50	27	0.02	0.0035	12.38	0.25	1.50	5	0.00	2.50		SAG
16+62.00 (LT)	C.L	D-5	0.18	0.50	6.58	0.59	-	0.59	27	0.02	0.0035	7.21	0.14	0.36	5	0.00	0.59		SAG

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	
B.L.M. CHECKED	
AVO: 30537	

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
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NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312



STORM DRAIN LINES "C" & "D"
RAGAN ROAD
INLET CALCULATIONS

PHASE V STREET
RECONSTRUCTION

SHEET
64
CITY BID No.
69-11-15-PHASE V

HYDRAULIC COMPUTATIONS FOR SYSTEM "C" (100-YR)

Design Point sta	Downstream Location sta	Distance feet	Area Designation	Drainage Area					Rainfall Intensity				Design Flow				Design Conduit		Friction Loss		Hydraulic Grade Line			Velocity		Minor Loss				Ground/HGL Elev		Comments		
				Drainage Area acres	Total Drainage Area "A" acres	Runoff Coefficient "C"	Incremental "CA"	Total "CA"	Inlet Time min	Travel Time in Conduit min	Time of Concentration min	Rainfall Intensity "i" in/hr	Total Discharge "Q" cfs	Bypass Discharge cfs	Inlet Discharge cfs	Conduit Design Discharge cfs	No. of Conduits	Span (Box Culvert) ft	Pipe Diameter (Culvert Rise) in (ft)	Friction Slope "S" ft/ft	Friction Loss ft	Downstream HGL Elevation	Upstream HGL Elevation	Design Point HGL Elevation	Downstream Velocity (V2) ft/sec	Upstream Velocity (V1) ft/sec	Downstream Velocity Head V2/2g ft	Upstream Velocity Head V1/2g ft	Minor Loss Coefficient k	kV12/2g ft	Total Minor Loss ft		Upstream ground elev	Elev. diff ground-HGL
STORM DRAIN LINE "C"																																		
1+00.00	1+07.73	7.7	C-1	3.66	3.66	0.50	1.83	1.83	-	0.02	15.00	9.60	17.6	-	-	17.6	1	-	24	0.0060	0.047	561.16	561.21	561.94	5.59	0.00	0.49	0.00	1.50	0.00	0.73	563.29	1.35	Curb Inlet
1+07.73	1+72.92	65.2	-	-	3.66	0.50	0.00	1.83	-	0.19	15.02	9.59	17.6	-	-	17.6	1	-	24	0.0060	0.392	560.56	560.96	561.16	5.59	5.59	0.48	0.49	0.43	0.21	0.21	563.12	1.96	60 ^ Bend
1+72.92	3+16.33	143.4	C-2	0.11	3.77	0.50	0.06	1.89	-	0.42	15.22	9.53	18.0	-	-	18.0	1	-	24	0.0063	0.904	559.52	560.42	560.56	5.72	5.59	0.51	0.48	0.75	0.36	0.14	563.42	2.86	60 ^ Wye
3+16.33	3+22.97	6.6	C-3	0.10	3.87	0.50	0.05	1.94	-	0.02	15.64	9.40	18.2	-	-	18.2	1	-	24	0.0065	0.043	559.33	559.38	559.52	5.79	5.72	0.52	0.51	0.75	0.38	0.14	562.63	3.11	60 ^ Wye
3+22.97	4+17.79	94.8	C-4	0.56	4.43	0.50	0.28	2.22	-	0.24	15.65	9.39	20.8	-	-	20.8	1	-	24	0.0085	0.802	558.24	559.04	559.33	6.62	5.79	0.68	0.52	0.75	0.39	0.29	562.63	3.30	60 ^ Wye
4+17.79	5+36.52	118.7	C-5,C-6	12.04	16.47	0.50	6.02	8.24	-	0.32	15.89	9.32	76.8	-	-	76.8	1	-	48	0.0029	0.339	554.46	554.80	558.24	6.11	6.62	0.58	0.68	0.25	0.17	0.41	561.83	3.59	MH/90 ^
STORM DRAIN LATERAL C-2																																		
1+24.10	1+00.00	24.1	C-2	0.11	0.11	0.50	0.06	0.06	-	1.34	15.00	9.60	0.53	-	-	0.5	1	-	18	0.0000	0.001	560.56	560.56	560.66	0.30	0.00	0.00	0.00	1.50	0.00	0.10	563.42	2.76	Curb Inlet
STORM DRAIN LATERAL C-3																																		
1+07.83	1+00.00	7.8	C-3	0.10	0.10	0.50	0.05	0.05	-	0.48	15.00	9.60	0.48	-	-	0.5	1	-	18	0.0000	0.000	559.52	559.52	559.62	0.27	0.00	0.00	0.00	1.50	0.00	0.10	562.63	3.01	Curb Inlet
STORM DRAIN LATERAL C-4																																		
1+23.09	1+00.00	23.1	C-4	0.56	0.56	0.50	0.28	0.28	-	0.25	15.00	9.60	2.69	-	-	2.7	1	-	18	0.0007	0.015	559.33	559.35	559.45	1.52	0.00	0.04	0.00	1.50	0.00	0.10	562.63	3.18	Curb Inlet
STORM DRAIN LATERAL C-5																																		
1+23.73	1+00.00	23.7	C-5	6.02	6.02	0.50	3.01	3.01	-	0.04	15.00	9.60	28.89	-	-	28.9	1	-	24	0.0163	0.387	558.24	558.63	560.60	9.20	0.00	1.31	0.00	1.50	0.00	1.97	562.16	1.56	Curb Inlet
STORM DRAIN LATERAL C-6																																		
1+19.95	1+12.12	7.8	C-6	6.02	6.02	0.50	3.01	3.01	-	0.01	15.00	9.60	28.9	-	-	28.9	1	-	24	0.0163	0.128	559.00	559.13	561.10	9.20	0.00	1.31	0.00	1.50	0.00	1.97	562.16	1.06	Curb Inlet
1+12.12	1+00.00	12.1	Bend	-	6.02	-	0.00	3.01	-	0.02	15.01	9.59	28.9	-	-	28.9	1	-	24	0.0163	0.198	558.24	558.44	559.00	9.19	0.00	1.31	0.00	0.43	0.00	0.56	562.16	3.16	60 ^ Bend

HYDRAULIC COMPUTATIONS FOR SYSTEM "D" (100-YR)

Design Point sta	Downstream Location sta	Distance feet	Area Designation	Drainage Area					Rainfall Intensity				Design Flow				Design Conduit		Friction Loss		Hydraulic Grade Line			Velocity		Minor Loss				Ground/HGL Elev		Comments		
				Drainage Area acres	Total Drainage Area "A" acres	Runoff Coefficient "C"	Incremental "CA"	Total "CA"	Inlet Time min	Travel Time in Conduit min	Time of Concentration min	Rainfall Intensity "i" in/hr	Total Discharge "Q" cfs	Bypass Discharge cfs	Inlet Discharge cfs	Conduit Design Discharge cfs	No. of Conduits	Span (Box Culvert) ft	Pipe Diameter (Culvert Rise) in (ft)	Friction Slope "S" ft/ft	Friction Loss ft	Downstream HGL Elevation	Upstream HGL Elevation	Design Point HGL Elevation	Downstream Velocity (V2) ft/sec	Upstream Velocity (V1) ft/sec	Downstream Velocity Head V2/2g ft	Upstream Velocity Head V1/2g ft	Minor Loss Coefficient k	kV12/2g ft	Total Minor Loss ft		Upstream ground elev	Elev. diff ground-HGL
STORM DRAIN LINE "D"																																		
1+00.00	1+07.79	7.8	D-1	1.30	1.30	0.50	0.65	0.65	-	0.07	15.00	9.60	6.2	-	-	6.2	1	-	24	0.0008	0.006	562.00	562.01	562.11	1.99	0.00	0.06	0.00	1.50	0.00	0.10	563.78	1.67	Curb Inlet
1+07.79	1+15.59	7.8	-	-	1.30	0.50	0.00	0.65	-	0.07	15.07	9.58	6.2	-	-	6.2	1	-	24	0.0008	0.006	561.90	561.90	562.00	1.98	1.99	0.06	0.06	0.43	0.03	0.10	563.78	1.78	60 ^ Bend
1+15.59	2+67.79	152.2	D-2	1.30	2.60	0.50	0.65	1.30	-	0.64	15.13	9.56	12.4	-	-	12.4	1	-	24	0.0030	0.459	561.24	561.70	561.90	3.95	1.98	0.24	0.06	0.75	0.05	0.20	563.78	1.88	60 ^ Wye
2+67.79	2+75.59	7.8	D-3	2.60	5.20	0.50	1.30	2.60	-	0.02	15.77	9.36	24.3	-	-	24.3	1	-	24	0.0116	0.090	560.40	560.49	561.24	7.74	3.95	0.93	0.24	0.75	0.18	0.75	563.73	2.49	60 ^ Wye
2+75.59	3+00.89	25.3	D-4,D-5	3.54	8.74	0.50	1.77	4.37	-	0.07	15.79	9.35	40.9	-	-	40.9	1	-	36	0.0038	0.095	554.90	555.00	560.40	5.78	7.74	0.52	0.93	0.25	0.23	0.29	563.38	2.98	MH/90 ^
3+00.89	3+91.77	90.9	-	-	8.74	0.50	0.00	4.37	-	0.26	15.86	9.33	40.8	-	-	40.8	1	-	36	0.0037	0.340	554.46	554.80	554.90	5.77	5.78	0.52	0.52	0.20	0.10	0.10	564.11	9.21	20 ^ Bend
STORM DRAIN LATERAL D-2																																		
1+23.38	1+00.00	23.4	D-2	1.30	1.30	0.50	0.65	0.65	-	0.11	15.00	9.60	6.24	-	-	6.2	1	-	18	0.0035	0.082	561.90	561.98	562.27	3.53	0.00	0.19	0.00	1.50	0.00	0.29	563.78	1.51	Curb Inlet
STORM DRAIN LATERAL D-3																																		
1+07.79	1+00.00	7.8	D-3	2.60	2.60	0.50	1.30	1.30	-	0.03	15.00	9.60	12.48	-	-	12.5	1	-	24	0.0030	0.024	561.24	561.26	561.63	3.97	0.00	0.24	0.00	1.50	0.00	0.37	563.73	2.10	Curb Inlet
STORM DRAIN LATERAL D-4																																		
1+23.67	1+00.00	23.7	D-4	2.60	2.60	0.50	1.30	1.30	-	0.10	15.00	9.60	12.48	-	-	12.5	1	-	24	0.0030	0.072	560.40	560.47	560.84	3.97	0.00	0.24	0.00	1.50	0.00	0.37	563.73	2.89	Curb Inlet
STORM DRAIN LATERAL D-5b																																		
1+20.25	1+00.00	20.3	D-5b	0.76	0.76	0.50	0.38	0.38	-	0.16	15.00	9.60	3.65	-	-	3.6	1	-	18	0.0012	0.024	561.22	561.24	561.34	2.06	0.00	0.07	0.00	1.50	0.00	0.10	565.03	3.69	Curb Inlet
STORM DRAIN LATERAL D-5																																		
5+04.17	4+95.81	8.4	D-5	0.18	0.18	0.50	0.09	0.09	-	0.29	15.00	9.60	0.9	-	-	0.9	1	-	18	0.0001	0.001	561.22	561.22	561.32	0.49	0.00	0.00	0.00	1.50	0.00	0.10	565.03	3.71	Curb Inlet
4+95.81	1+00.00	395.8	D-5b	0.76	0.94	0.50	0.38	0.47	-	2.61	15.29	9.51	4.5	-	-	4.5	1	-	18	0.0018	0.716	560.40	561.12	561.22	2.53	0.00	0.10	0.00	0.25	0.00	0.10	565.03	3.81	MH/90 ^

2/17/2015 2:32:28 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869CALC04.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869CALC04.dgn



HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9874



NAME: *J. A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

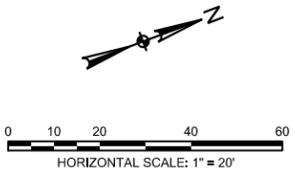


THE COLONY
City by the Lake

STORM DRAIN LINES "C" & "D"
RAGAN ROAD
HYDRAULIC CALCULATIONS

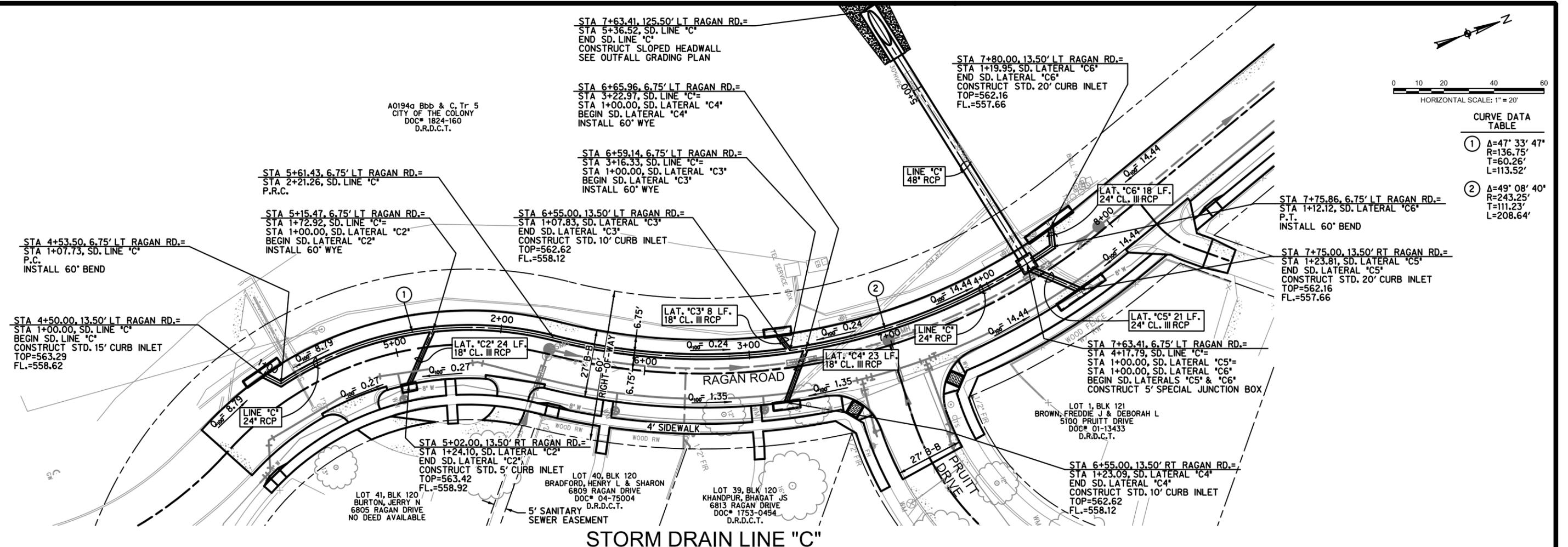
PHASE V STREET
RECONSTRUCTION

SHEET
65
CITY BID No.
69-11-15-PHASE V

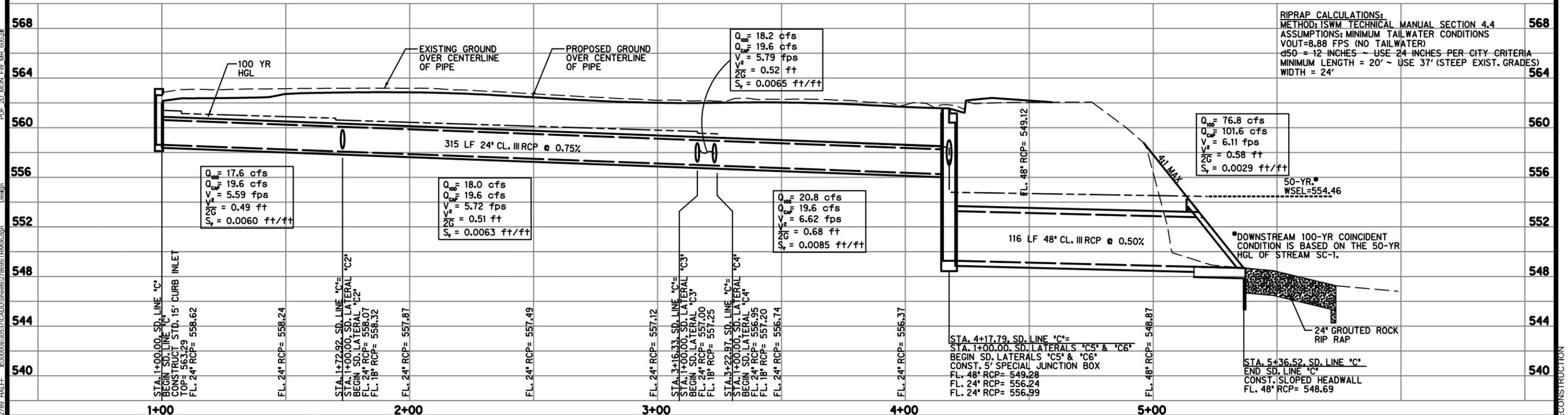


CURVE DATA TABLE

①	Δ=47° 33' 47"
	R=136.75'
	T=60.26'
	L=113.52'
②	Δ=49° 08' 40"
	R=243.25'
	T=111.23'
	L=208.64'



STORM DRAIN LINE "C"



RIPRAP CALCULATIONS:
METHOD: ISWM TECHNICAL MANUAL SECTION 4.4
ASSUMPTIONS: MINIMUM TAILWATER CONDITIONS
VOUT=8.88 FPS (NO TAILWATER)
d50 = 12-INCHES -- USE 24-INCHES PER CITY CRITERIA
MINIMUM LENGTH = 20' ~ USE 37' (STEEP EXIST. GRADES)
WIDTH = 24'

2/17/2015 2:32:32 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869STRM06.dgn Design

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. 1" = 20' VERT. 1" = 4' AVO: 30537 FILE: 27869STRM06.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

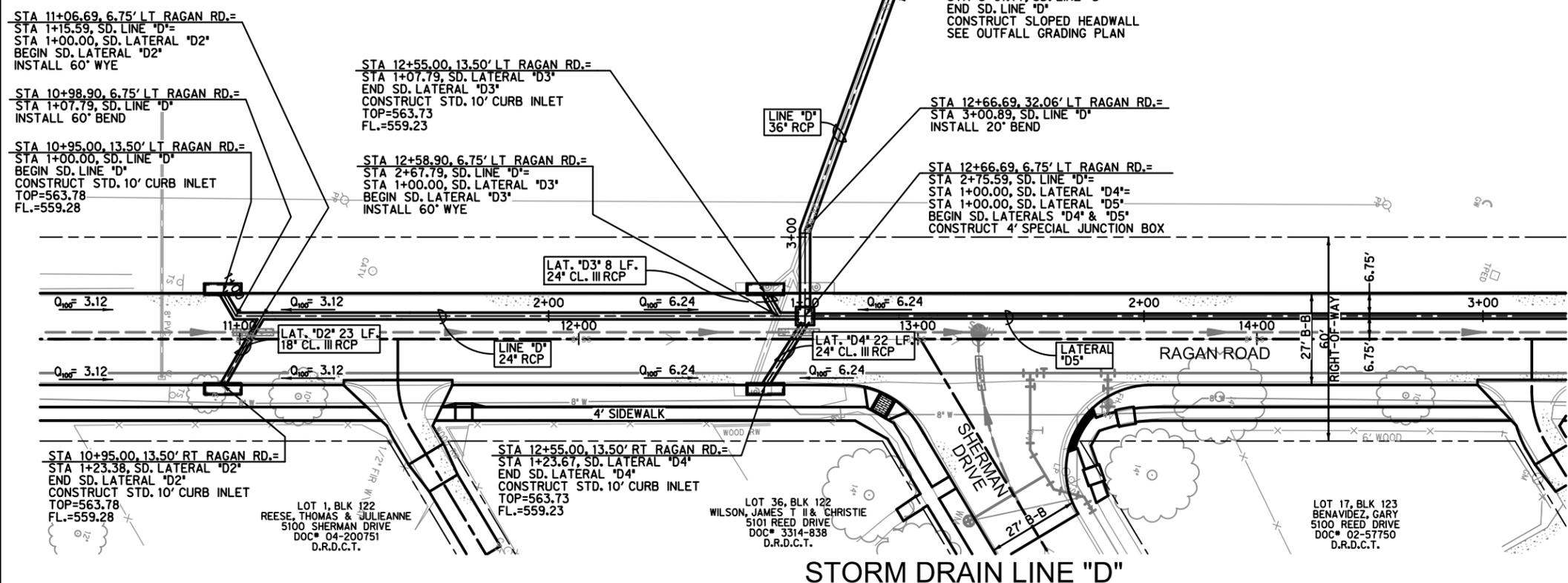
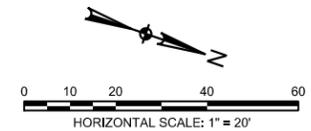
STORM DRAIN LINE "C"
PLAN AND PROFILE
STA 1+00 TO END

PHASE V STREET
RECONSTRUCTION

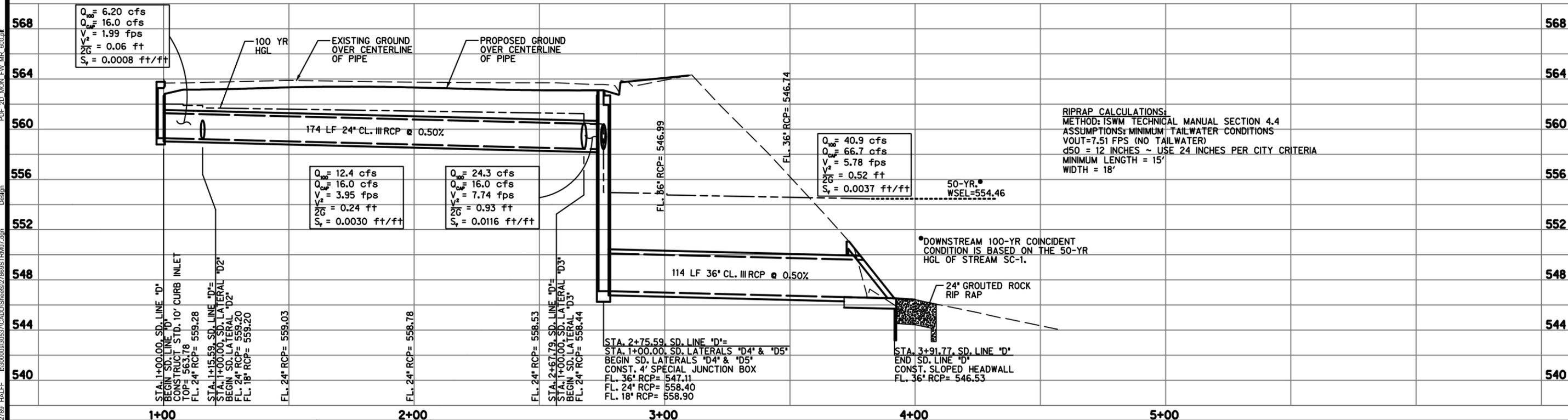
SHEET
66
CITY BID No.
69-11-15-PHASE V

A0194a Bbb & C, Tr 5
CITY OF THE COLONY
DOC# 1824-160
D.R.D.C.T.

A0611a R HARDIN Tr11
CITY OF THE COLONY
DOC# 1824-160
D.R.D.C.T.



STORM DRAIN LINE "D"



RIPRAP CALCULATIONS:
METHOD: ISWM TECHNICAL MANUAL SECTION 4.4
ASSUMPTIONS: MINIMUM TAILWATER CONDITIONS
VOLT=7.51 FPS (NO TAILWATER)
d50 = 12 INCHES - USE 24 INCHES PER CITY CRITERIA
MINIMUM LENGTH = 15'
WIDTH = 18'

2/17/2015 2:32:34 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869STRM07.dgn

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869STRM07.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312



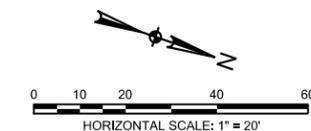
STORM DRAIN LINE "D"
PLAN AND PROFILE
STA 1+00 TO END

PHASE V STREET
RECONSTRUCTION

SHEET
67

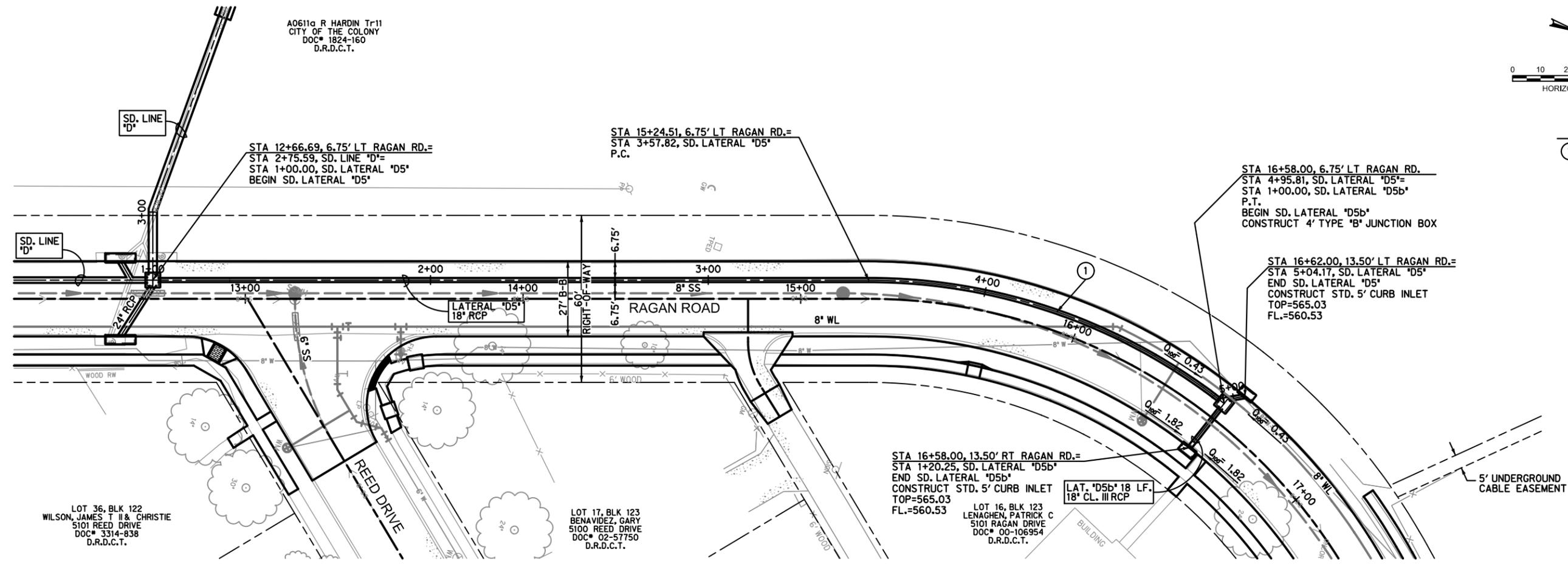
CITY BID No.
69-11-15-PHASE V

A0611a R HARDIN Tr-11
CITY OF THE COLONY
DOC# 1824-160
D.R.D.C.T.

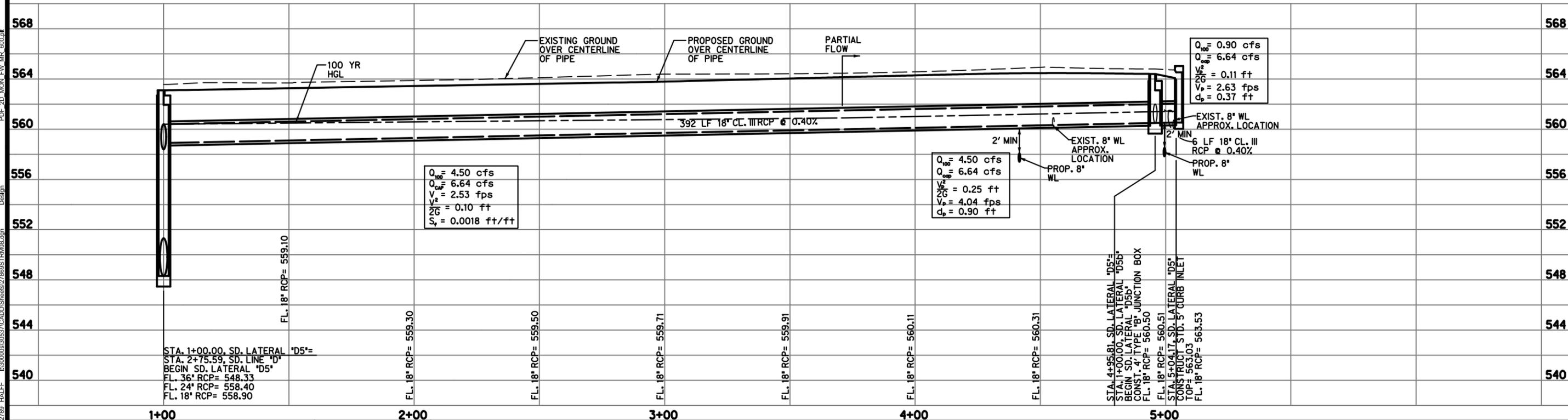


CURVE DATA TABLE

①	Δ=38° 14' 27"
	R=206.75'
	T=71.68'
	L=137.99'



STORM DRAIN LATERAL "D5"



2/17/2015 2:32:37 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869STRM08.dgn

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869STRM08.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

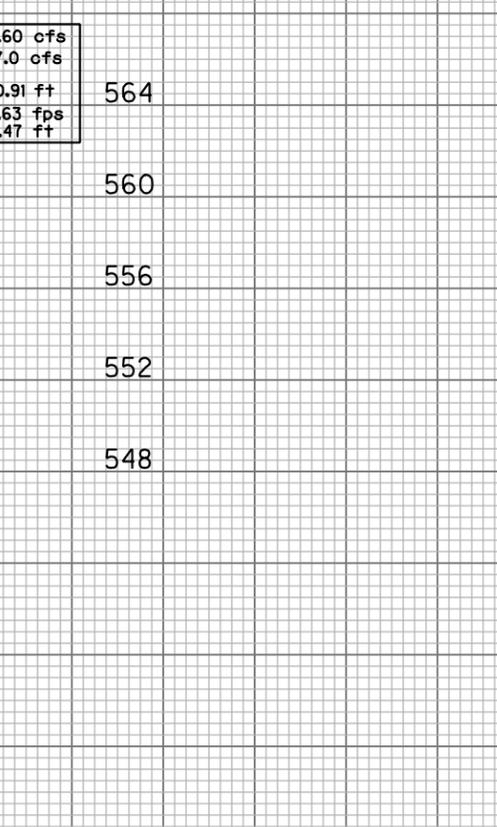
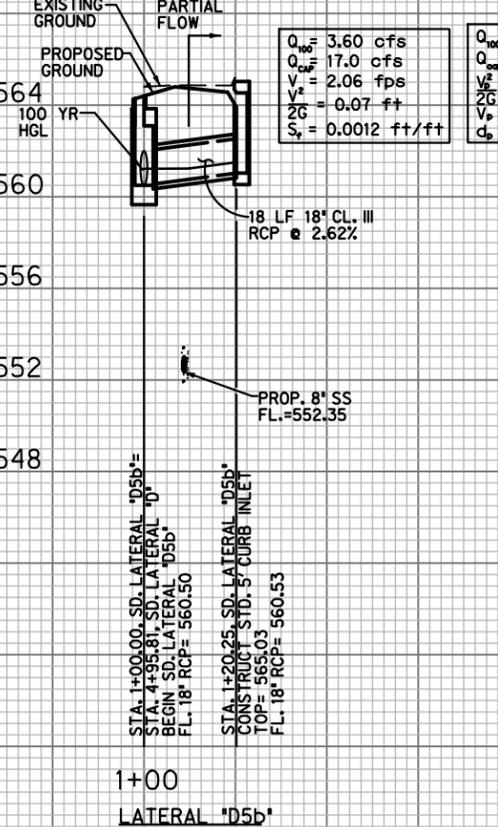
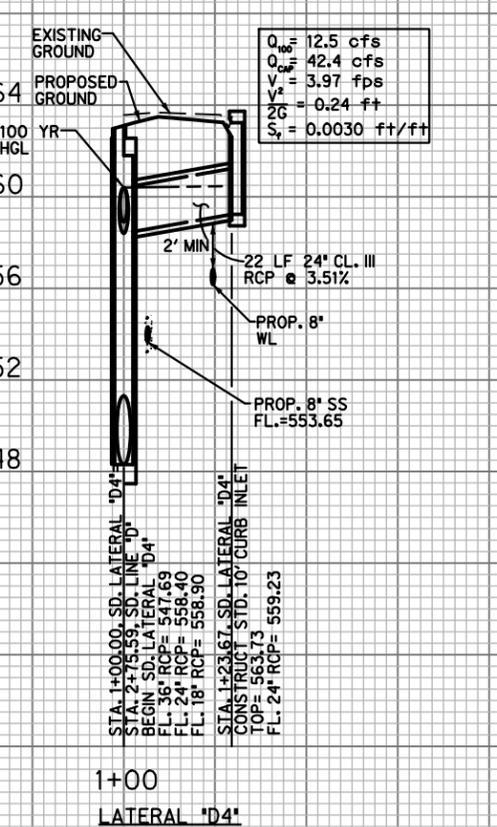
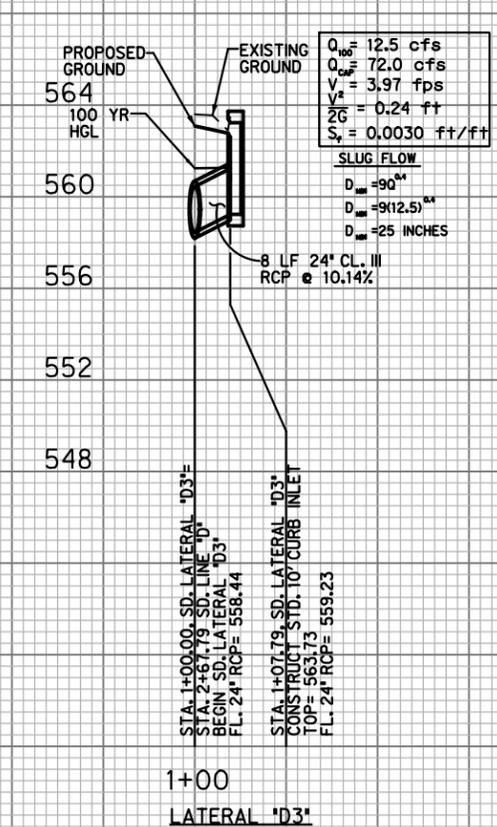
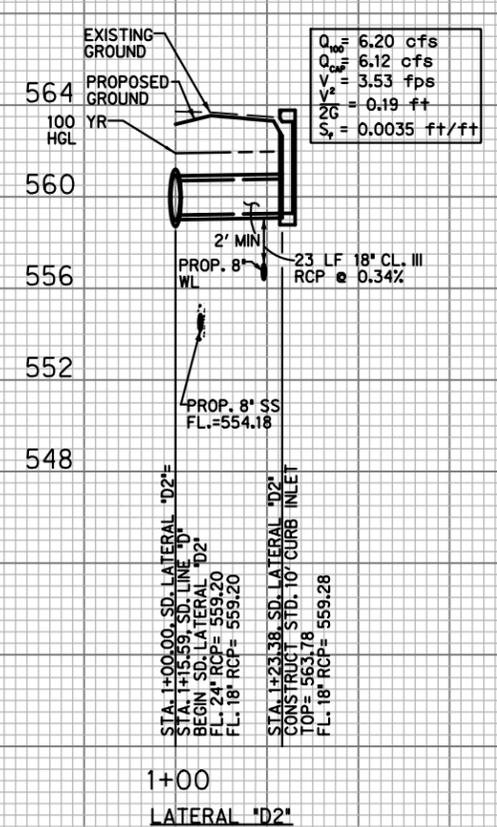
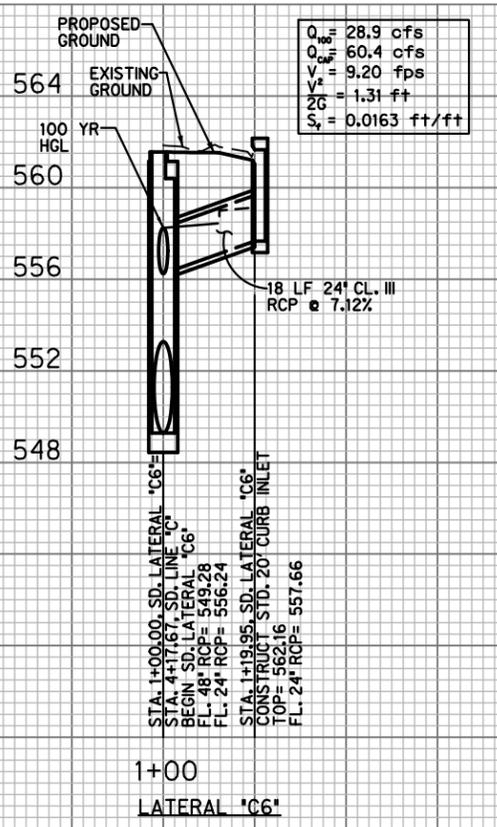
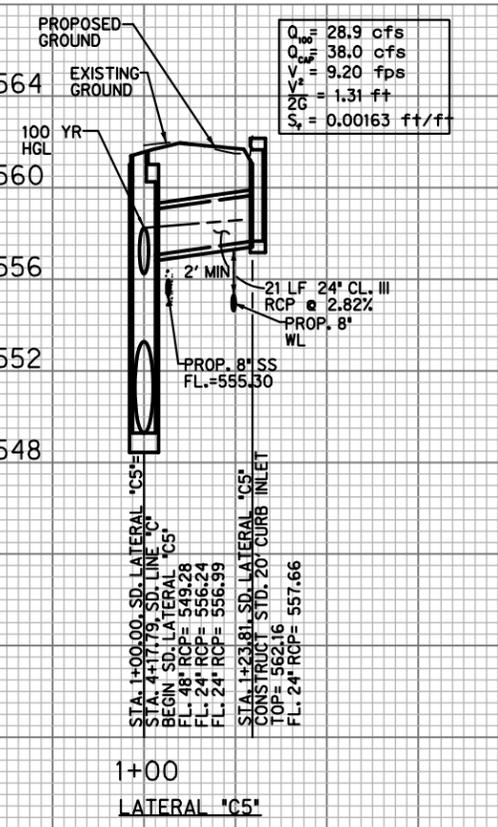
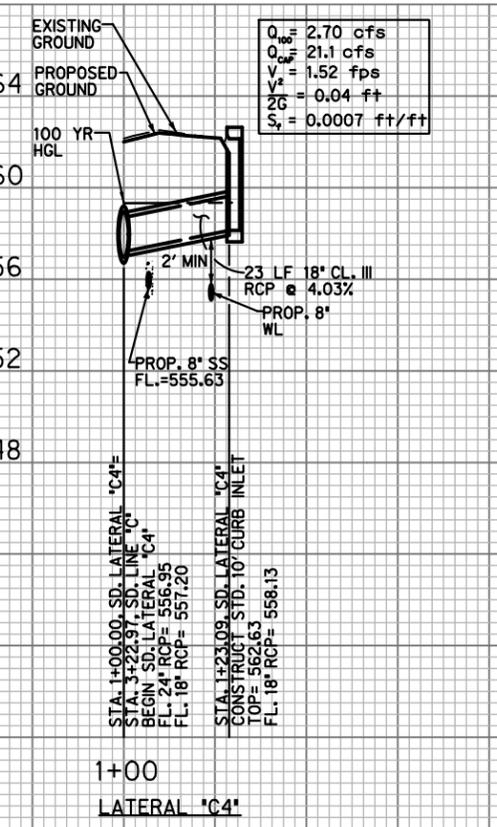
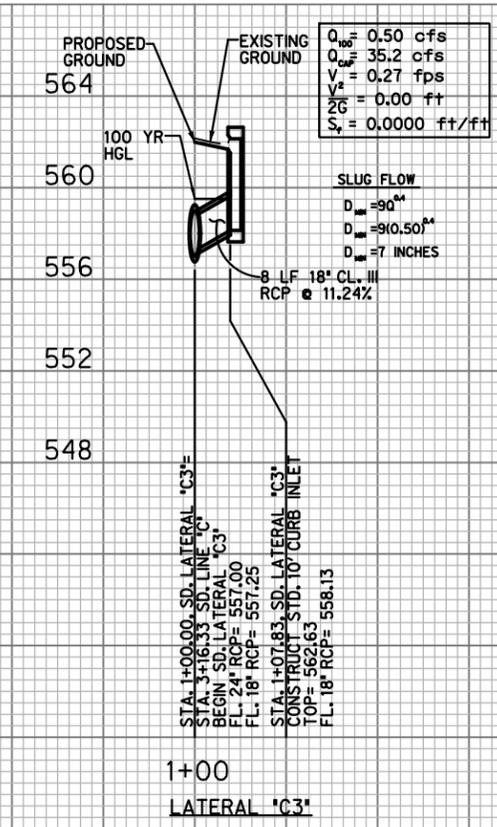
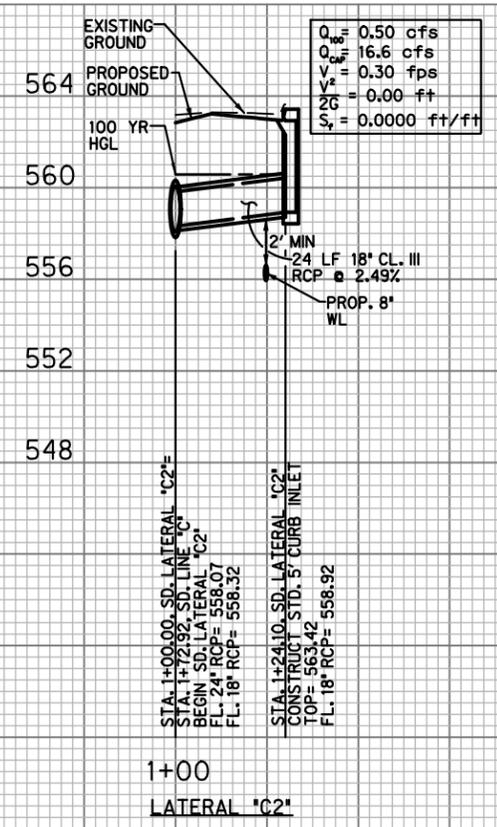


STORM DRAIN LATERAL "D5"
PLAN AND PROFILE
STA 1+00 TO END

PHASE V STREET
RECONSTRUCTION

SHEET
68
CITY BID No.
69-11-15-PHASE V

2/17/2015 2:32:38 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869STRM09.dgn Design



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	HORIZ. : 1" = 20'
B.L.M. CHECKED	VERT. : 1" = 4'
	AVO: 30537
	FILE: 27869STRM09.dgn

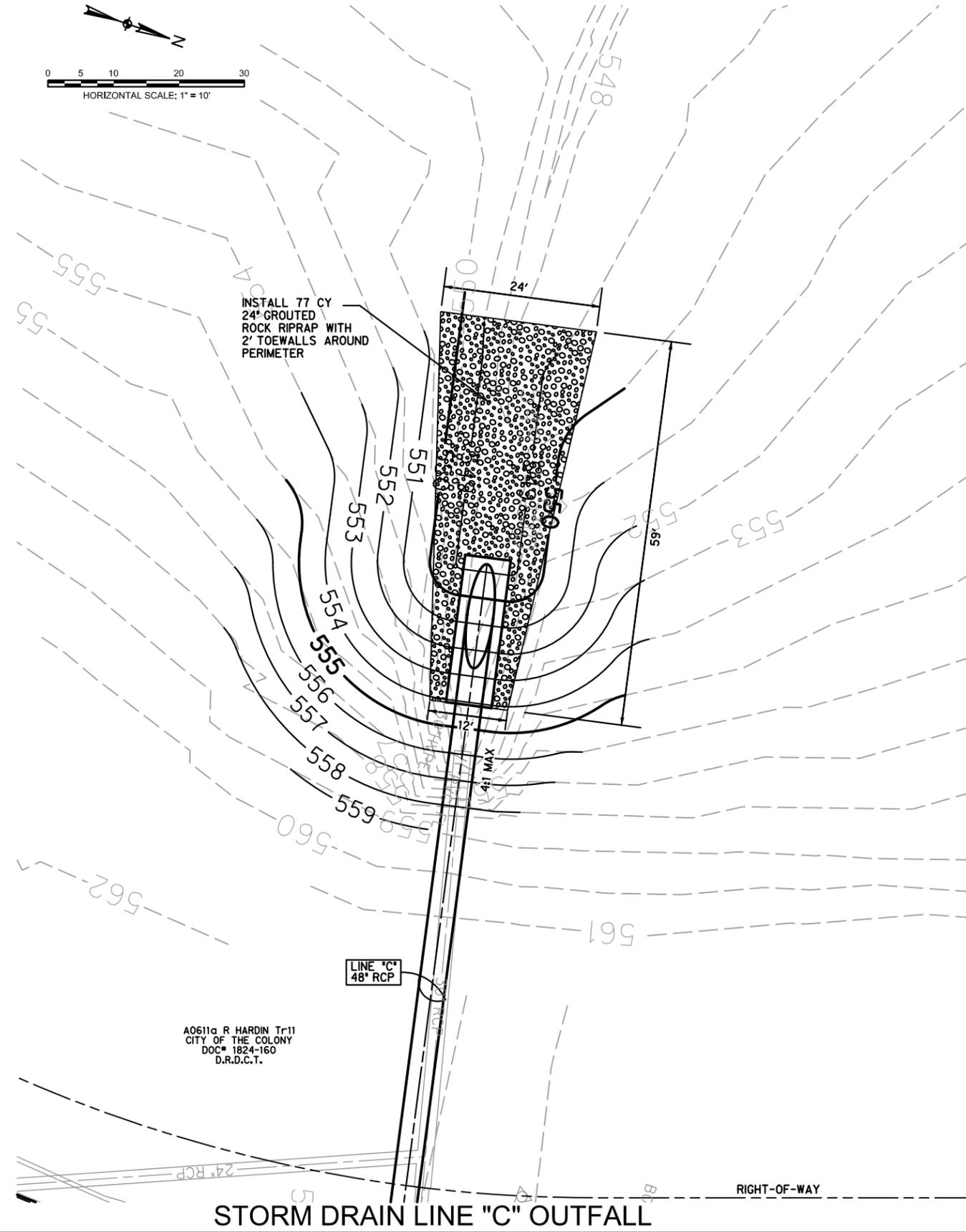
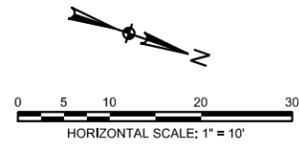
HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9874

J. J. McCall
 LICENSED PROFESSIONAL ENGINEER
 NO. 103573
 NAME: J. J. McCall
 DATE: 2/20/15
 TBPE FIRM #F-312

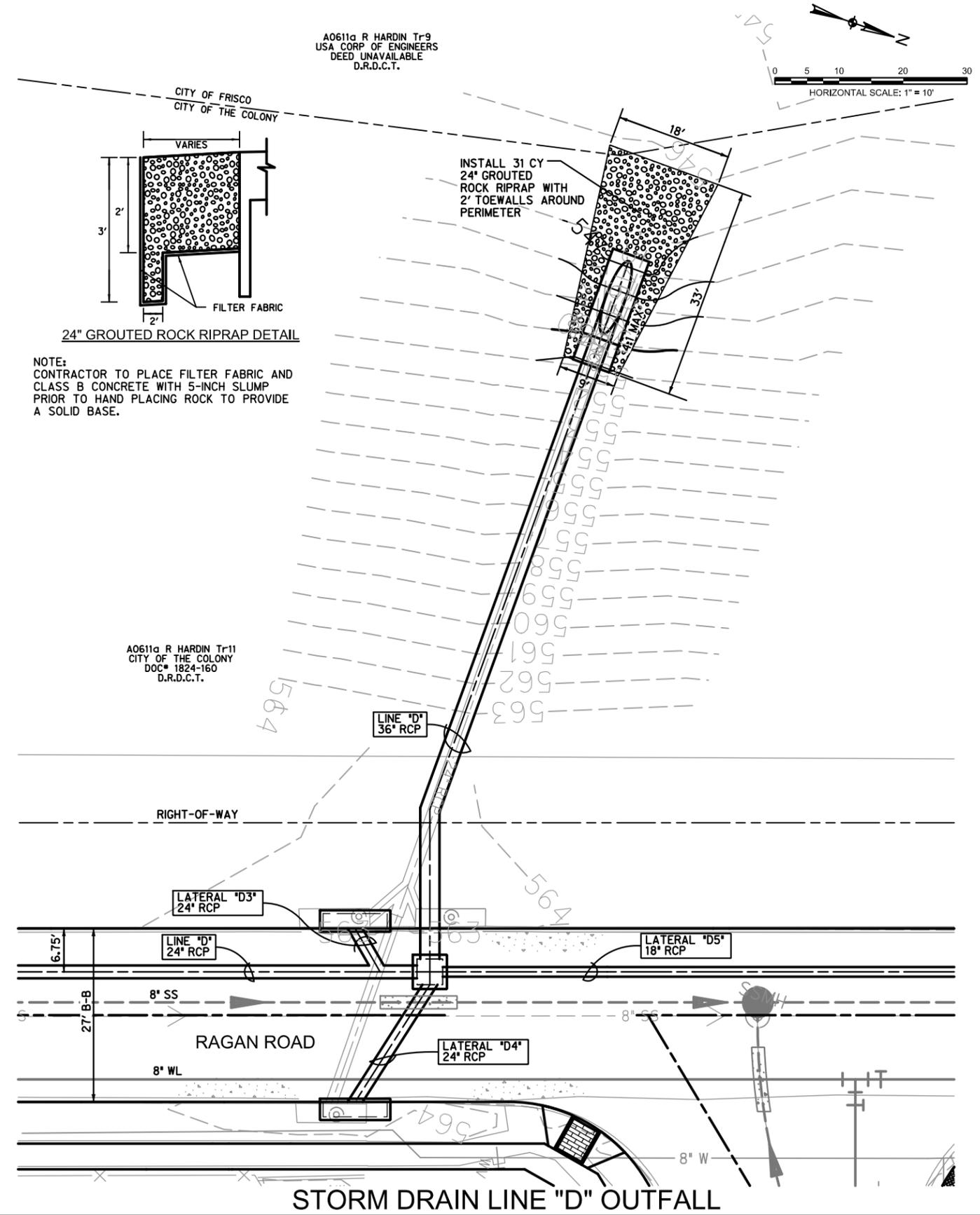
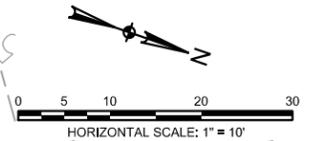
THE COLONY
 City by the Lake

STORM DRAIN LINE "C" & "D"
 LATERAL PROFILES
 PHASE V STREET
 RECONSTRUCTION

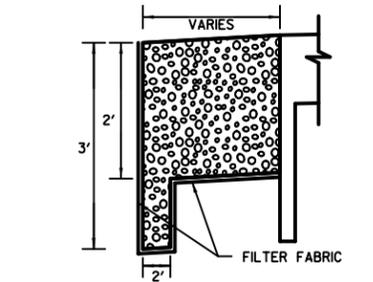
SHEET
 69
CITY BID No.
 69-11-15-PHASE V



STORM DRAIN LINE "C" OUTFALL



STORM DRAIN LINE "D" OUTFALL



24" GROUDED ROCK RIPRAP DETAIL

NOTE:
CONTRACTOR TO PLACE FILTER FABRIC AND CLASS B CONCRETE WITH 5-INCH SLUMP PRIOR TO HAND PLACING ROCK TO PROVIDE A SOLID BASE.

2/17/2015 2:32:42 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869STRM13.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869STRM13.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784

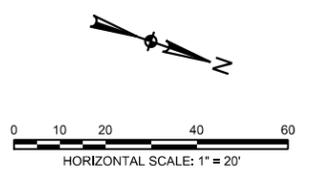


Leigh A. Hollis
NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312



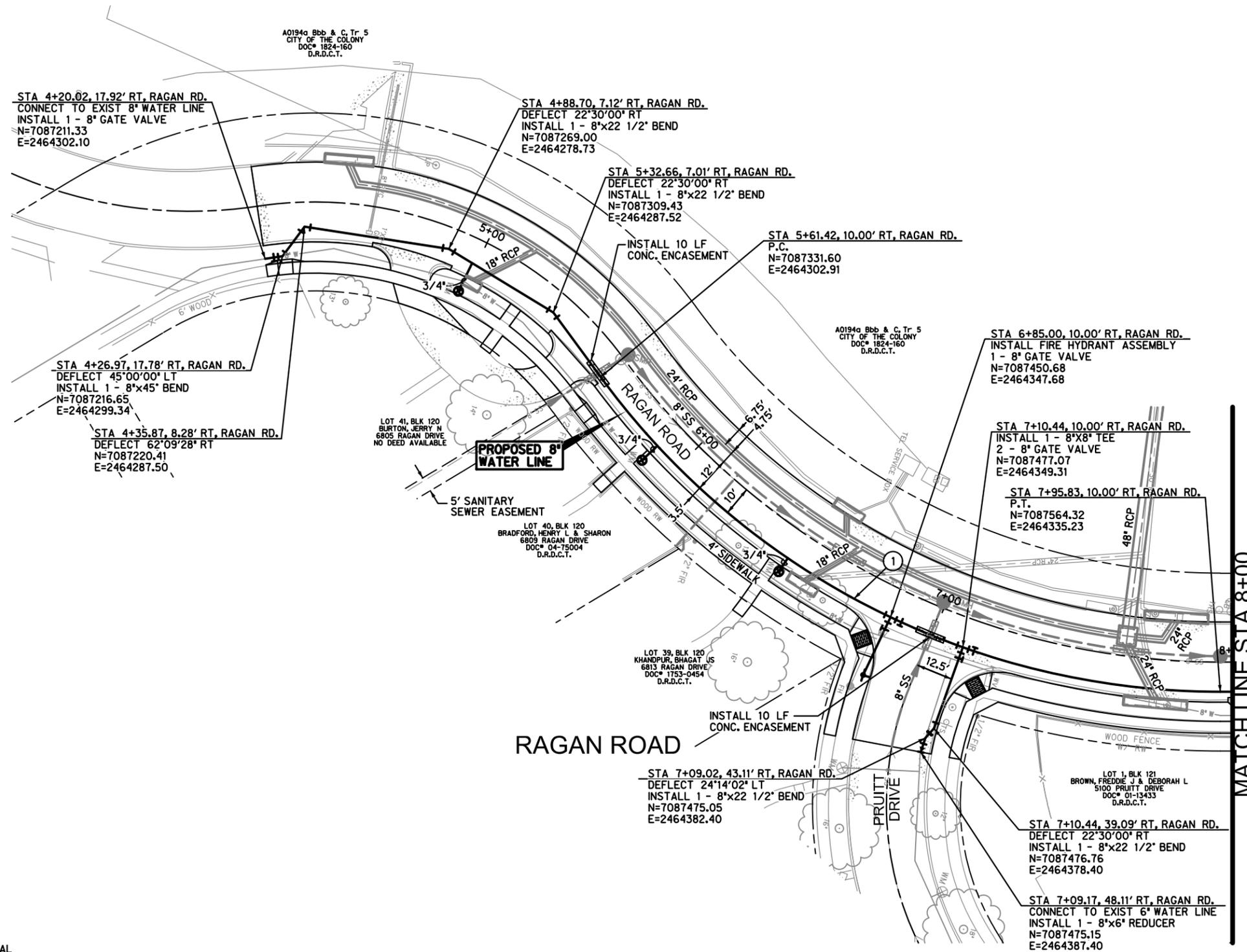
STORM DRAIN LINES "C" & "D"
OUTFALL GRADING PLAN
PHASE V STREET
RECONSTRUCTION

SHEET
70
CITY BID No.
69-11-15-PHASE V



CURVE DATA

① $\Delta=53^{\circ} 43' 22''$
 $R=260.00'$
 $T=131.69'$
 $L=243.79'$



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:32:44 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869UWTR01.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



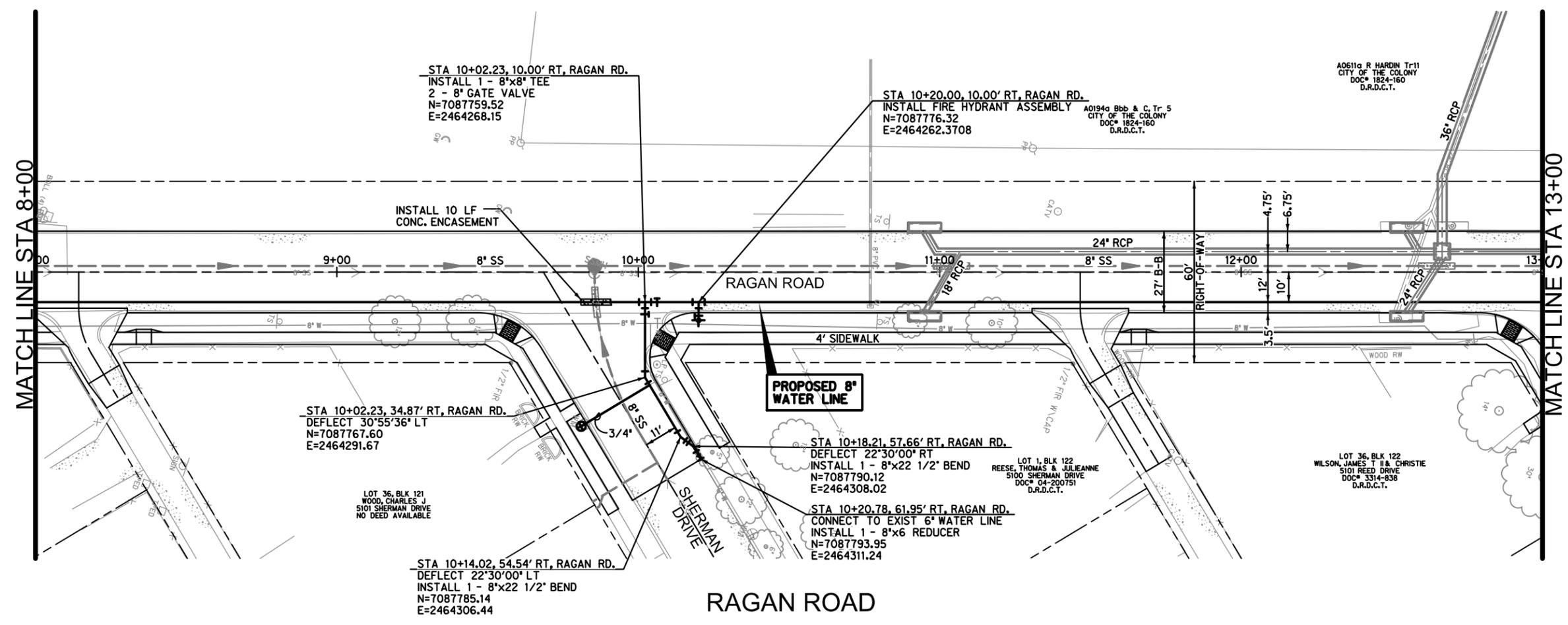
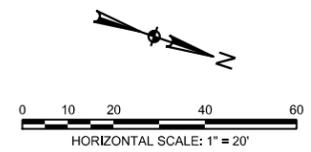
RAGAN ROAD
 WATER LINE PLAN
 STA 4+20.02 TO STA 8+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 71

CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



NOTE:
 1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.

2/17/2015 2:32:47 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869UWTR02.dgn

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR02.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

STATE OF TEXAS
 LEIGH A. WOLLIS
 103573
 LICENSED PROFESSIONAL ENGINEER

Leigh A. Wollis
 NAME: Leigh A. Wollis
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

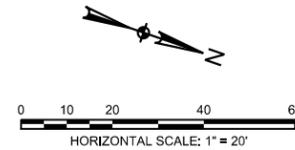
RAGAN ROAD
 WATER LINE PLAN
 STA 8+00 TO STA 13+00

PHASE V STREET
 RECONSTRUCTION

SHEET
 72

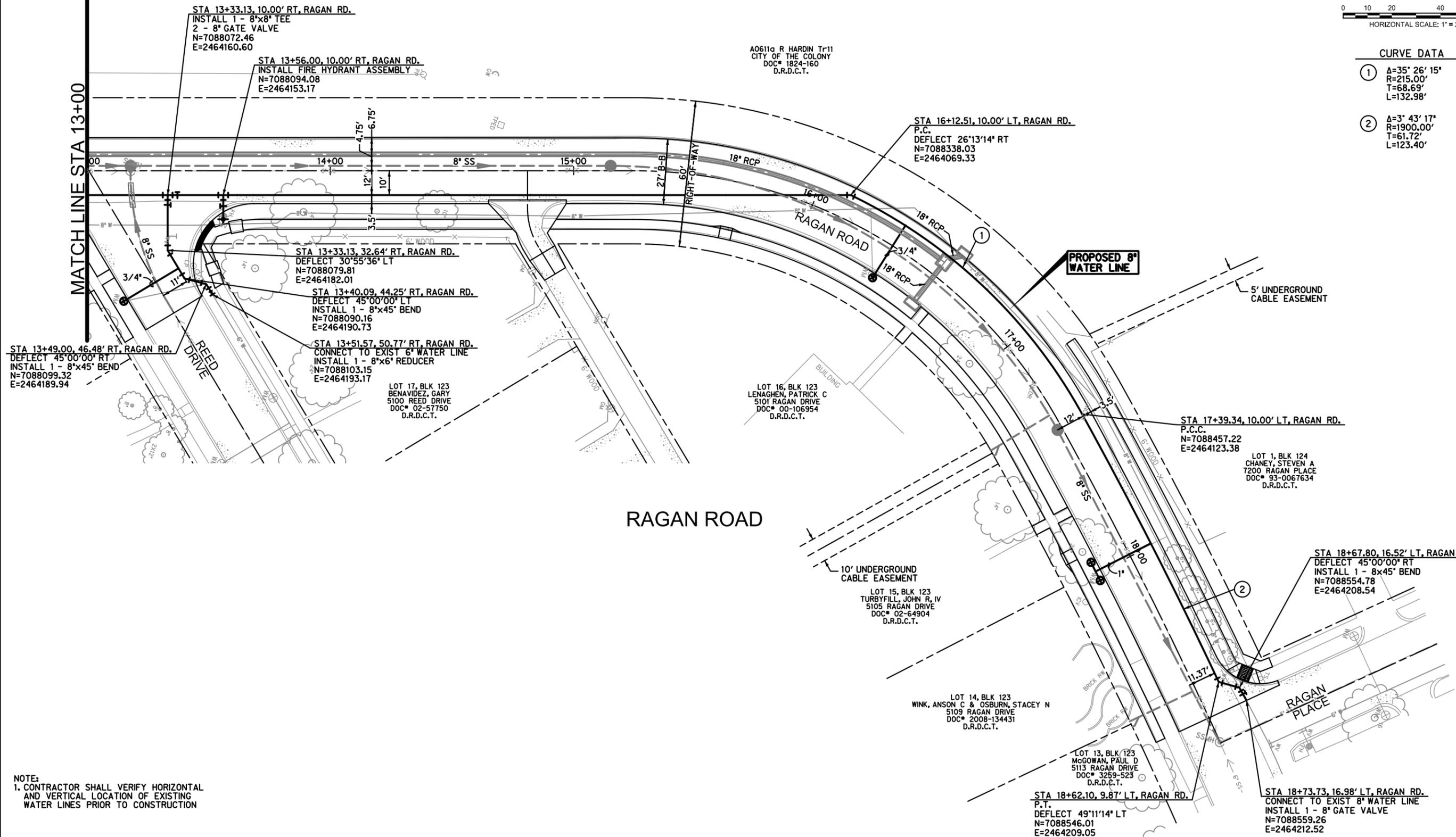
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



CURVE DATA

- ① A=35° 26' 15"
R=215.00'
T=68.69'
L=132.98'
- ② A=3° 43' 17"
R=1900.00'
T=61.72'
L=123.40'



STA 13+49.00, 46.48' RT, RAGAN RD.
DEFLECT 45°00'00" RT
INSTALL 1 - 8"x45" BEND
N=7088099.32
E=2464189.94

STA 13+33.13, 10.00' RT, RAGAN RD.
INSTALL 1 - 8"x8" TEE
2 - 8" GATE VALVE
N=7088072.46
E=2464160.60

STA 13+56.00, 10.00' RT, RAGAN RD.
INSTALL FIRE HYDRANT ASSEMBLY
N=7088094.08
E=2464153.17

STA 13+33.13, 32.64' RT, RAGAN RD.
DEFLECT 30°55'36" LT
N=7088079.81
E=2464182.01

STA 13+40.09, 44.25' RT, RAGAN RD.
DEFLECT 45°00'00" LT
INSTALL 1 - 8"x45" BEND
N=7088090.16
E=2464190.73

STA 13+51.57, 50.77' RT, RAGAN RD.
CONNECT TO EXIST 6" WATER LINE
INSTALL 1 - 8"x6" REDUCER
N=7088103.15
E=2464193.17

LOT 17, BLK 123
BENAVIDEZ, GARY
5100 REED DRIVE
DOC# 02-57750
D.R.D.C.T.

A0611g R HARDIN Tr11
CITY OF THE COLONY
DOC# 1824-160
D.R.D.C.T.

STA 16+12.51, 10.00' LT, RAGAN RD.
P.C.
DEFLECT 26°13'14" RT
N=7088338.03
E=2464069.33

STA 17+39.34, 10.00' LT, RAGAN RD.
P.C.C.
N=7088457.22
E=2464123.38

LOT 1, BLK 124
CHANEY, STEVEN A
7200 RAGAN PLACE
DOC# 93-0067634
D.R.D.C.T.

LOT 15, BLK 123
TURBYFILL, JOHN R, IV
5105 RAGAN DRIVE
DOC# 02-64904
D.R.D.C.T.

LOT 14, BLK 123
WINK, ANSON C & OSBURN, STACEY N
5109 RAGAN DRIVE
DOC# 2008-134431
D.R.D.C.T.

LOT 13, BLK 123
MCGOWAN, PAUL D
5113 RAGAN DRIVE
DOC# 3259-523
D.R.D.C.T.

STA 18+62.10, 9.87' LT, RAGAN RD.
P.T.
DEFLECT 49°11'14" LT
N=7088546.01
E=2464209.05

STA 18+67.80, 16.52' LT, RAGAN RD.
DEFLECT 45°00'00" RT
INSTALL 1 - 8"x45" BEND
N=7088554.78
E=2464208.54

STA 18+73.73, 16.98' LT, RAGAN RD.
CONNECT TO EXIST 8" WATER LINE
INSTALL 1 - 8" GATE VALVE
N=7088559.26
E=2464212.52

NOTE:
1. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION

2/17/2015 2:32:49 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869UWTR03.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869UWTR03.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

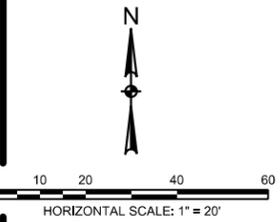
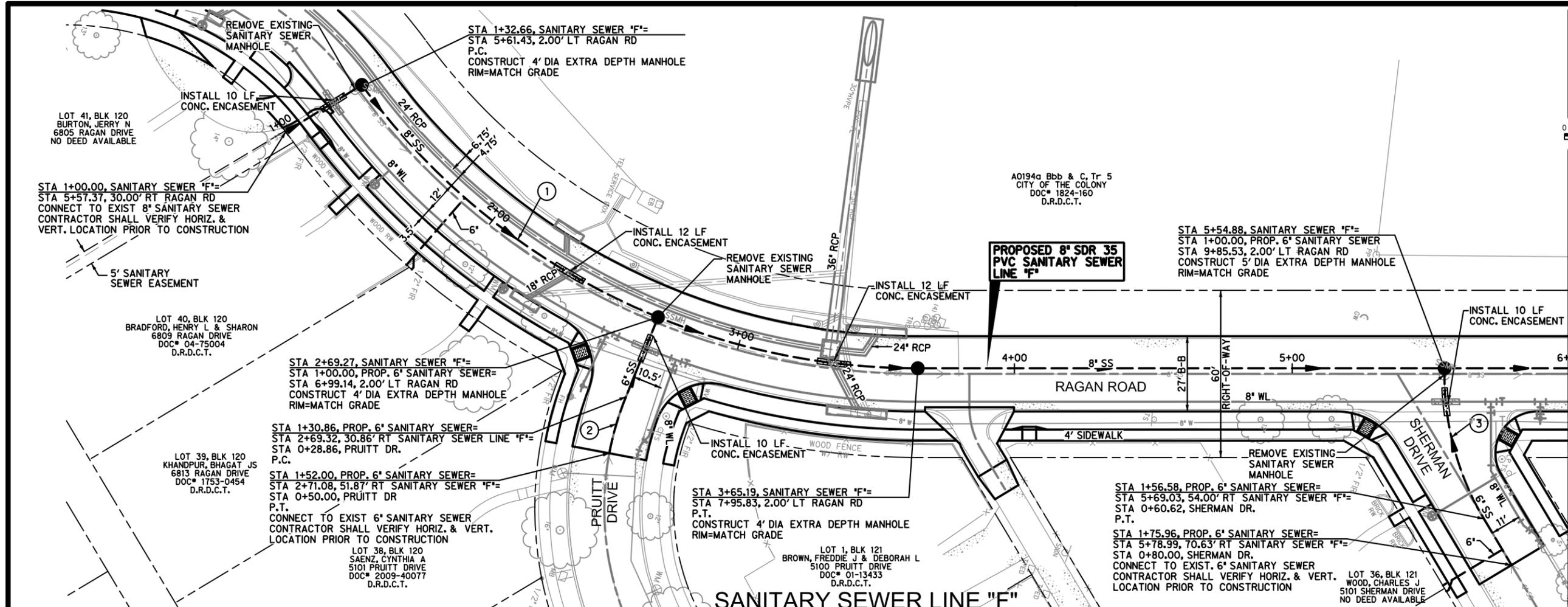


RAGAN ROAD
WATER LINE PLAN
STA 13+00 TO END

PHASE V STREET
RECONSTRUCTION

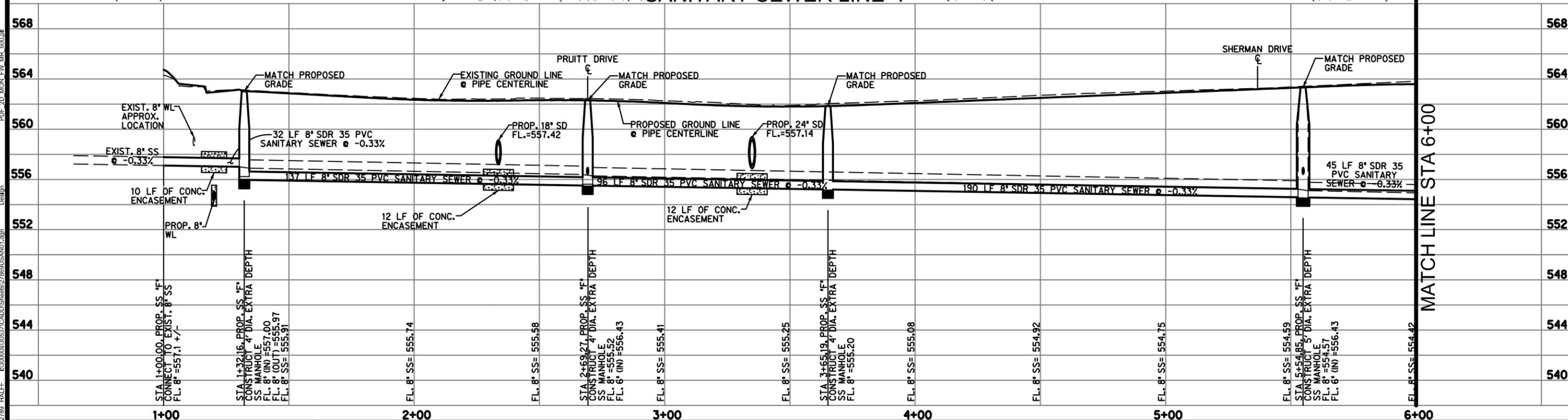
SHEET
73
CITY BID No.
69-11-15-PHASE V

2/17/2015 2:32:51 PM a12789 HALFF R:\30000s\30537\CADD\Sheets\27869\USAN01.dgn



CURVE DATA

①	A=53° 43' 15"
	R=248.00'
	L=232.53'
	T=125.60'
	CB=S 7° 54' 20" W
	CL=224.10'
②	A=11° 24' 5"
	R=105.92'
	L=21.08'
	T=10.57'
	CB=N 87° 24' 0" E
	CL=21.04'
③	A=32° 27' 17"
	R=100.00'
	L=56.64'
	T=29.10'
	CB=S 56° 20' 5" W
	CL=55.89'



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AV0: 30537 FILE: 27869\USAN01.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



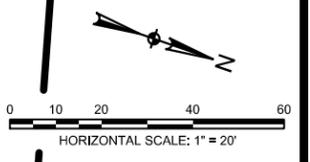
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



SANITARY SEWER LINE "F"
 PLAN AND PROFILE
 STA 1+00 TO STA 6+00

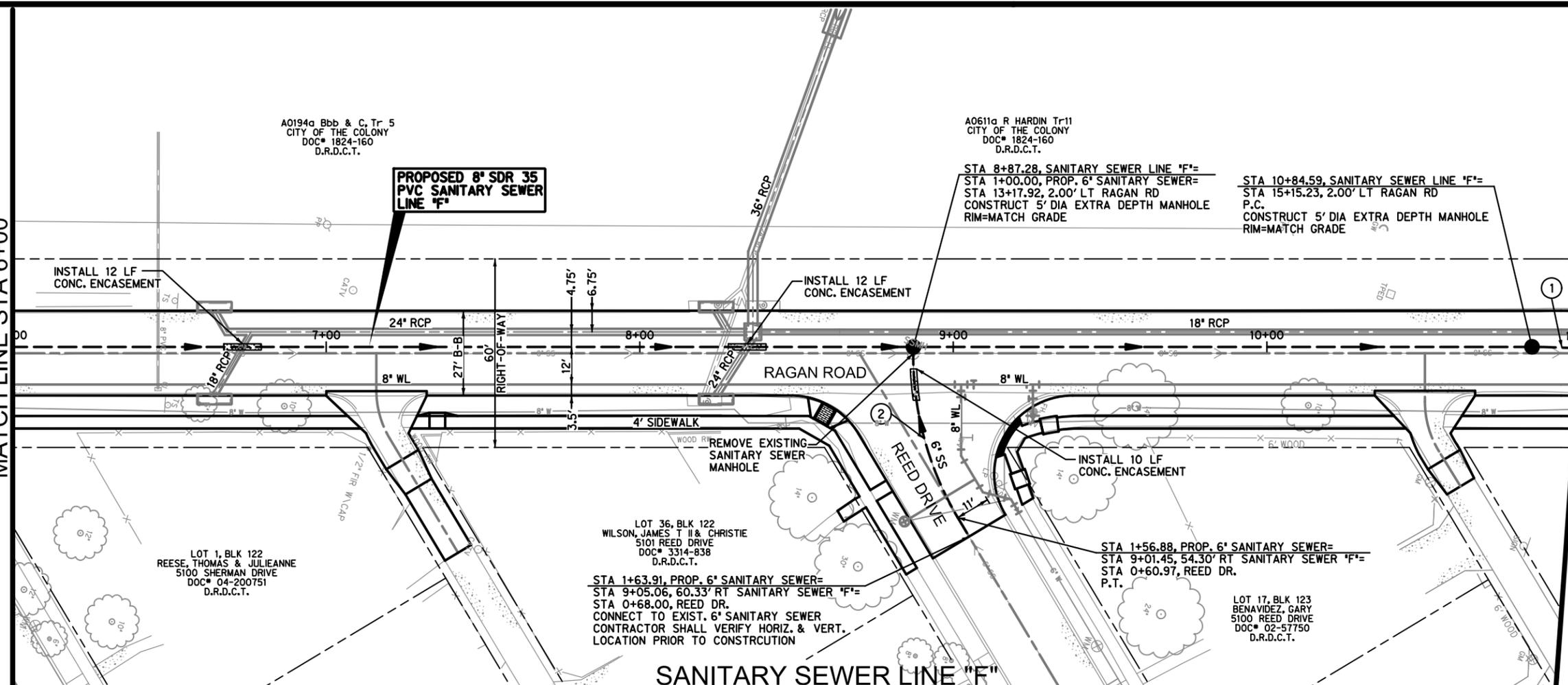
PHASE V STREET RECONSTRUCTION

SHEET
 74
CITY BID No.
 69-11-15-PHASE V



MATCH LINE STA 6+00

MATCH LINE STA 11+00

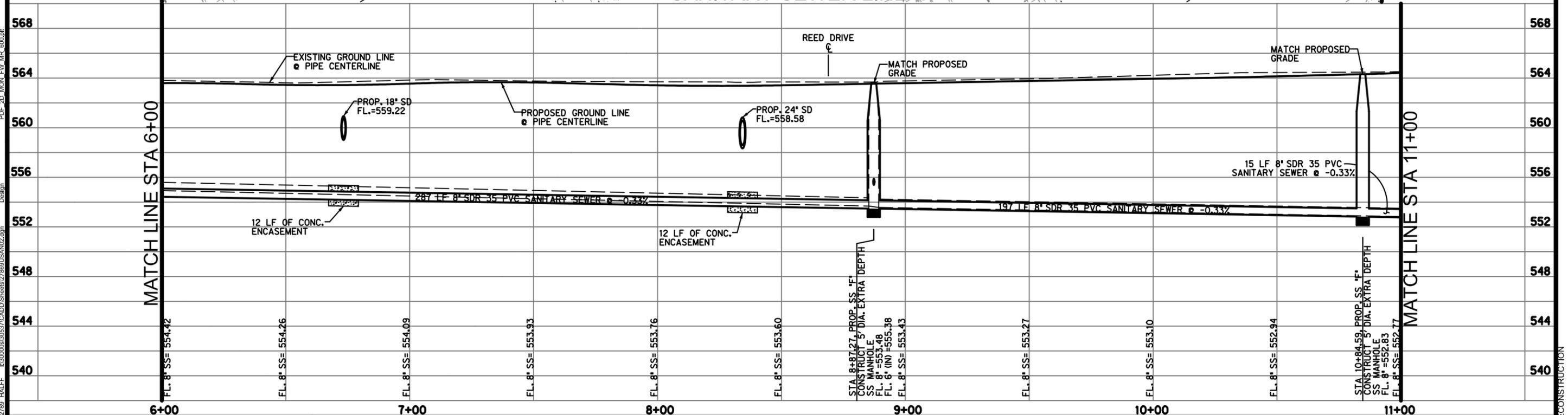


CURVE DATA

①	Δ=61° 2' 39"
	R=210.00'
	L=223.74'
	T=123.81'
	CB=N 11° 33' 21" E
	CL=213.31'
②	Δ=32° 35' 48"
	R=100.00'
	L=56.89'
	T=29.24'
	CB=N 56° 24' 20" E
	CL=56.13'

MATCH LINE STA 6+00

MATCH LINE STA 11+00



2/17/2015 2:32:54 PM ah2789 HALFF R:\3000s\30537\CADD\Sheets\27869\USAN02.dgn

PHASE IV STREET RECONSTRUCTION

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN02.dgn
CADD DRAWN	
B.L.M. CHECKED	



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

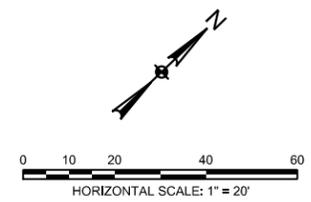


SANITARY SEWER LINE "F"
 PLAN AND PROFILE
 STA 6+00 TO STA 11+00

PHASE V STREET
 RECONSTRUCTION

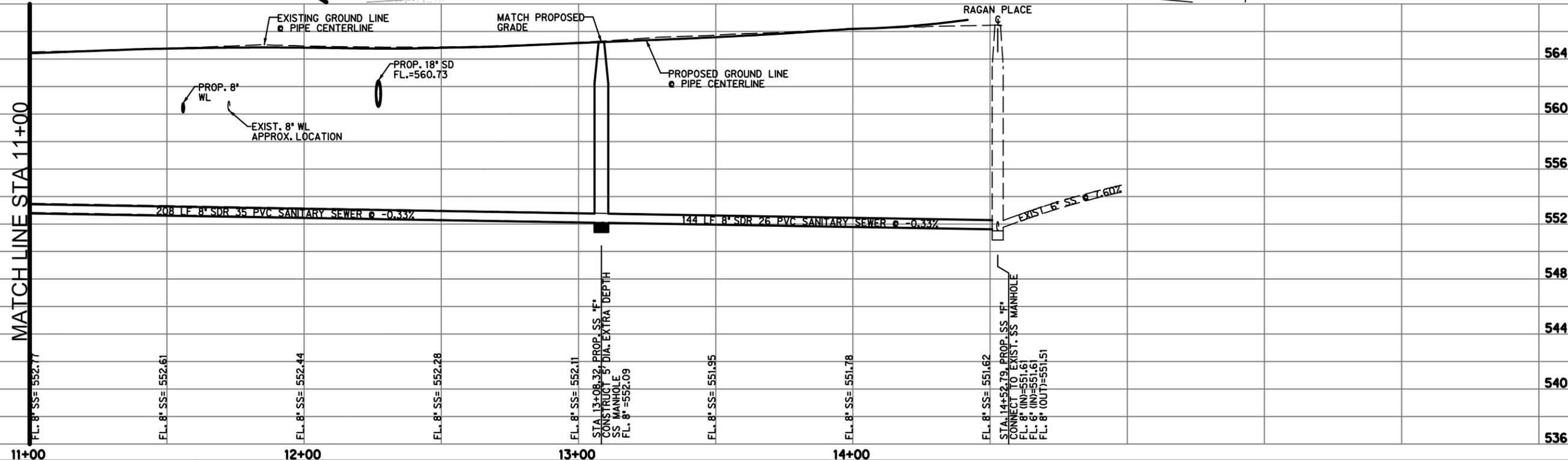
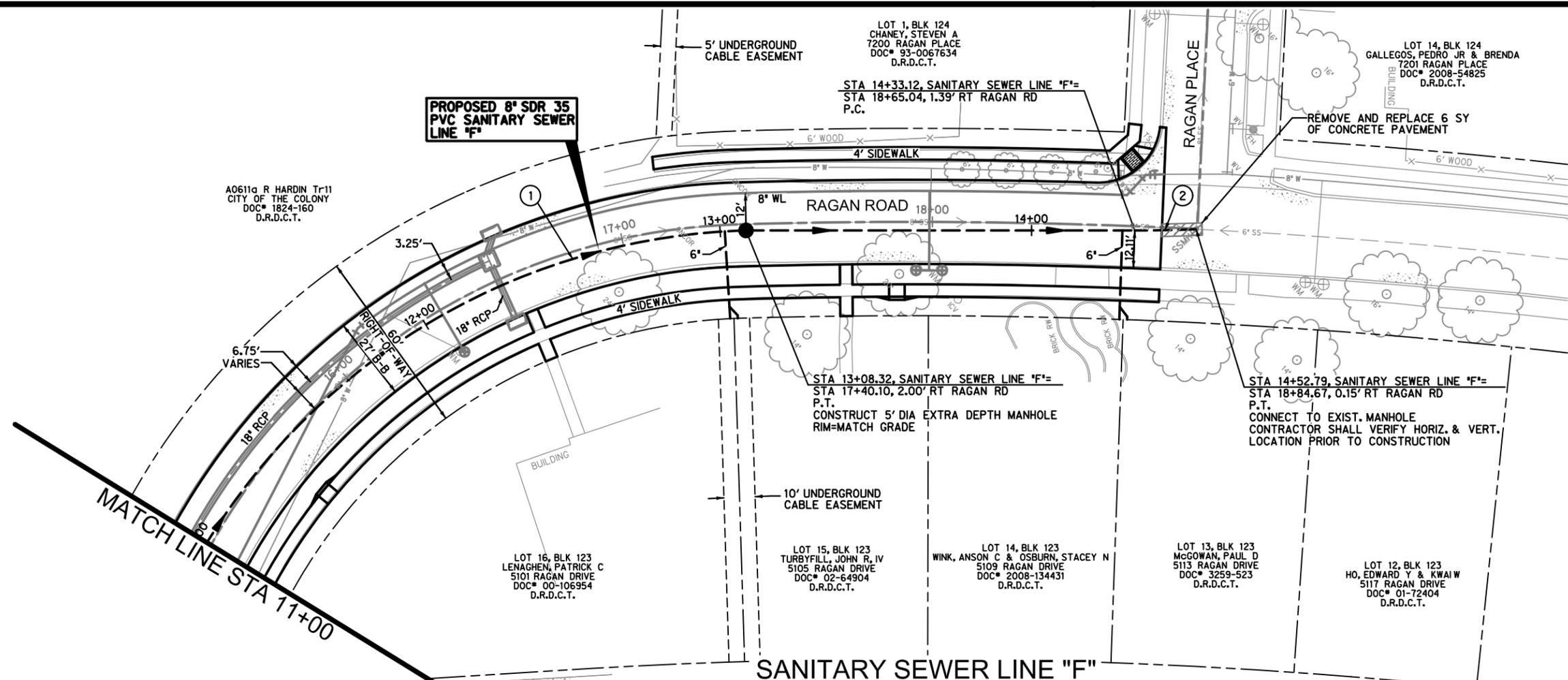
SHEET
75

CITY BID No.
69-11-15-PHASE V



CURVE DATA

①	Δ=61° 2' 39"
	R=210.00'
	L=223.74'
	T=123.81'
	CB=S 11° 33' 21" W
	CL=213.31'
②	Δ=2° 15' 13"
	R=500.00'
	L=19.67'
	T=9.83'
	CB=N 42° 33' 47" E
	CL=19.67'



2/17/2015 2:32:56 PM ah2789 HALFF R:\3000s\30537\CADD\Sheets\27869\USAN03.dgn
 Design R:\3000s\30537\CADD\Sheets\27869\USAN03.dgn
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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN03.dgn
CADD DRAWN	
B.L.M. CHECKED	



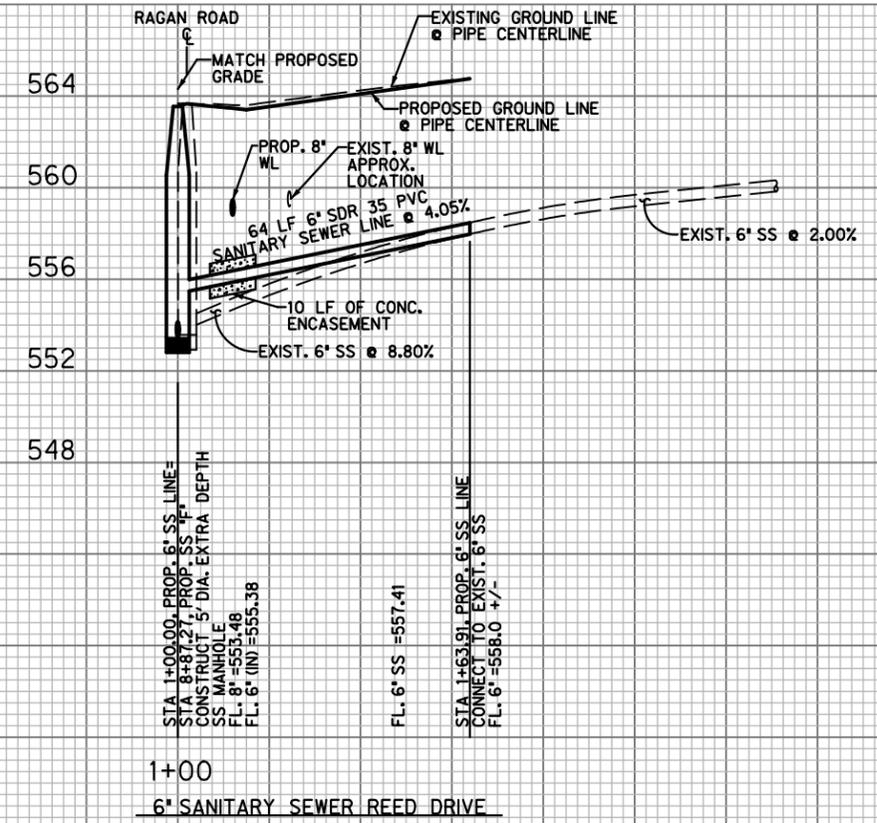
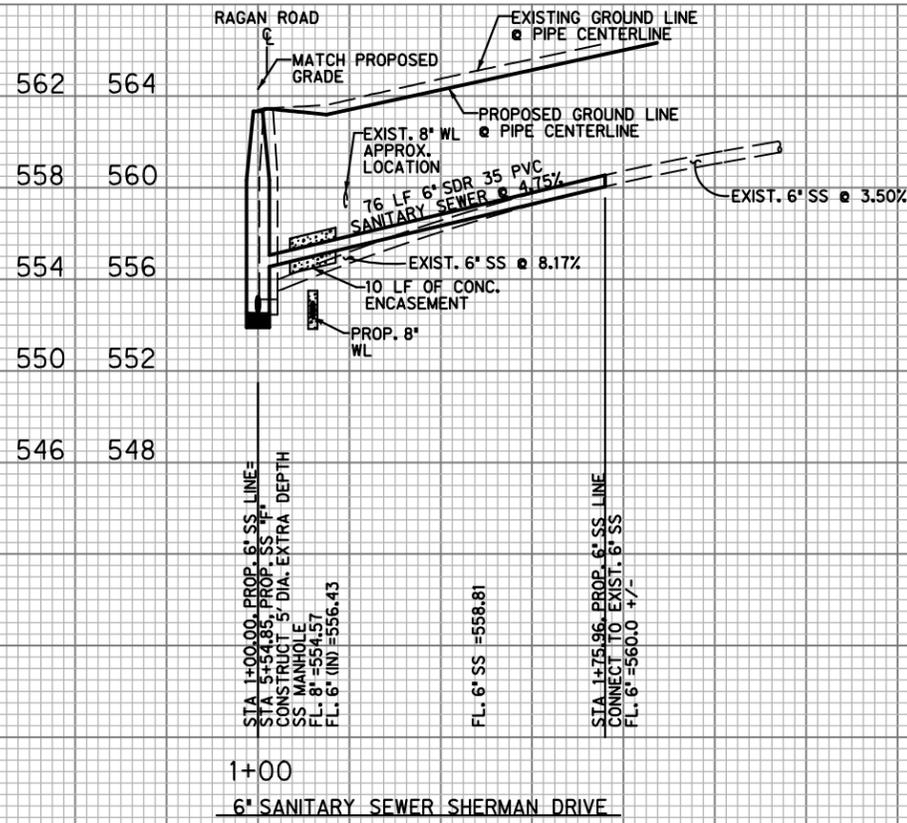
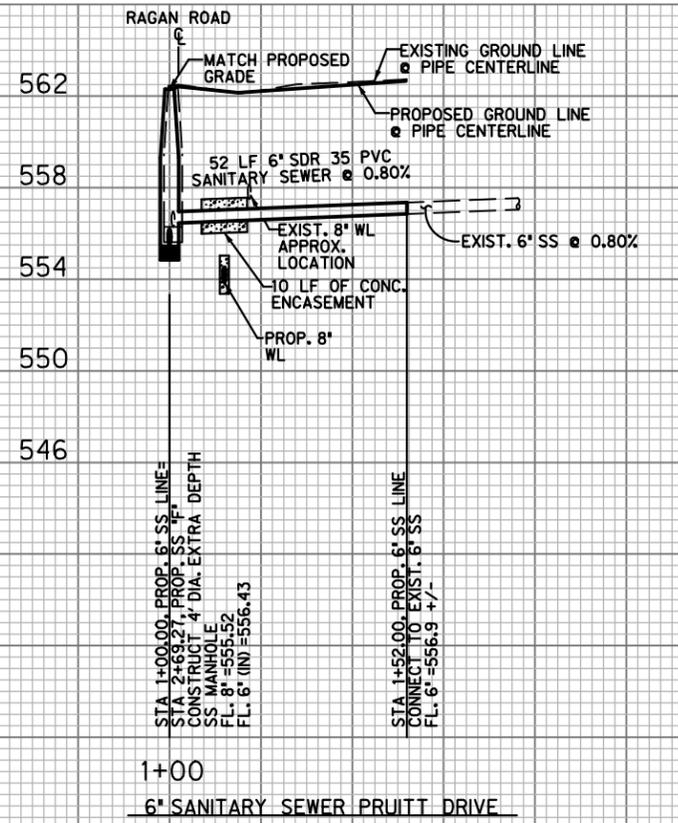
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



SANITARY SEWER LINE "F"
 PLAN AND PROFILE
 STA 11+00 TO END
 PHASE V STREET
 RECONSTRUCTION

SHEET
 76
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 20' VERT. : 1" = 4' AVO: 30537 FILE: 27869USAN22.dgn
CADD DRAWN	
B.L.M. CHECKED	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

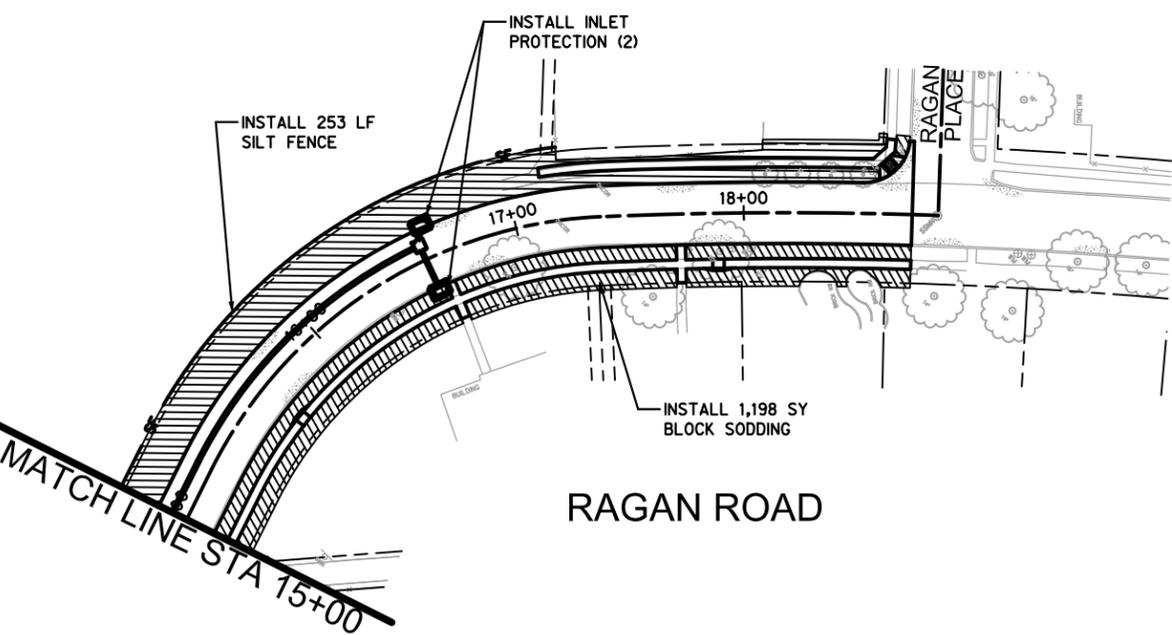
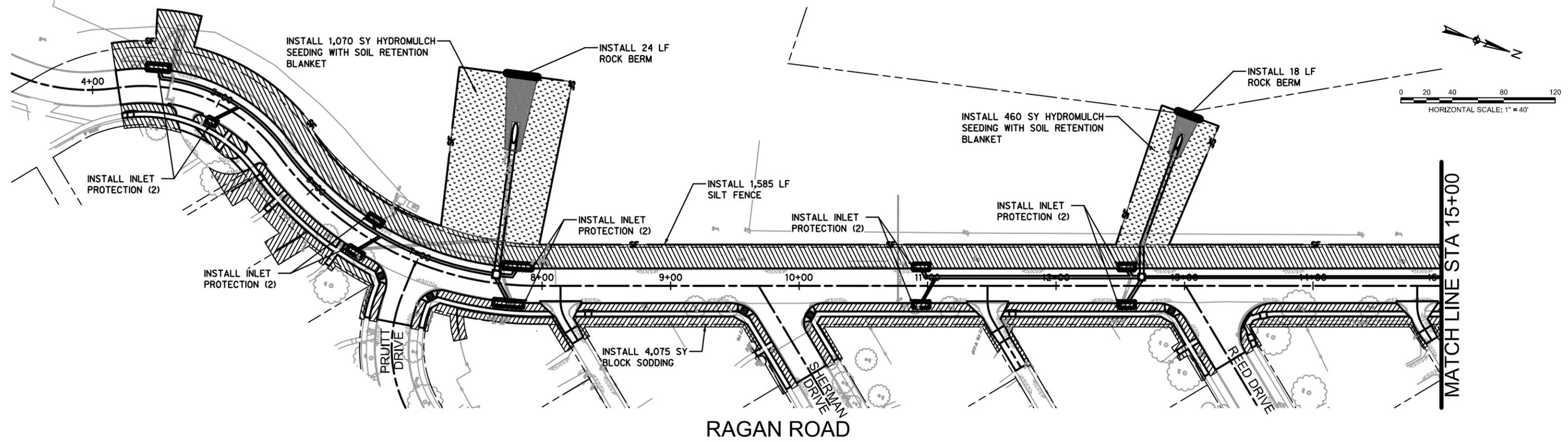
THE COLONY
 City by the Lake

SANITARY SEWER LINE "F"
 LATERAL PROFILES

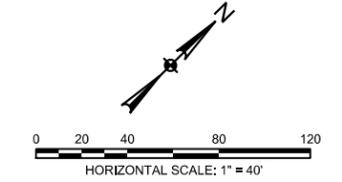
PHASE V STREET
 RECONSTRUCTION

SHEET
 77

CITY BID No.
 69-11-15-PHASE V



NOTE:
 PROPOSED BLOCK SODDING SHOWN ON THIS SHEET INCLUDES AREAS BEYOND THE RIGHT-OF-WAY THAT ARE GRADED AS REQUIRED BY THE PAVING PLAN AND PROFILE SHEETS. AREAS DISTURBED OUTSIDE OF THESE LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



- LEGEND**
- PROPOSED INLET PROTECTION
 - LIMIT OF PROPOSED STREET RECONSTRUCTION
 - STORM DRAIN IMPROVEMENTS
 - EXISTING STORM DRAIN
 - PROPOSED HYDROMULCH SEEDING WITH SOIL RETENTION BLANKET
 - BLOCK SODDING
 - PROPOSED SILT FENCE
 - PROPOSED ROCK BERM

2/17/2015 2:33:02 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869ECPL01.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869ECPL01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



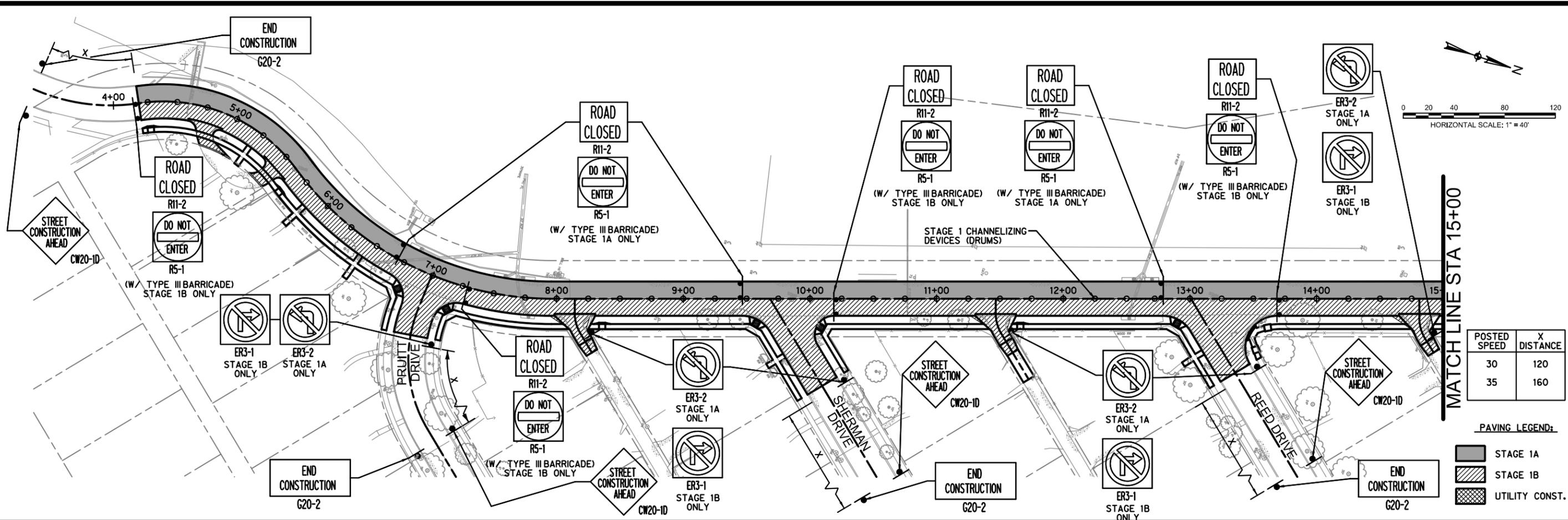
RAGAN ROAD
 EROSION CONTROL PLAN

PHASE V STREET
 RECONSTRUCTION

SHEET
 78

CITY BID No.
 69-11-15-PHASE V

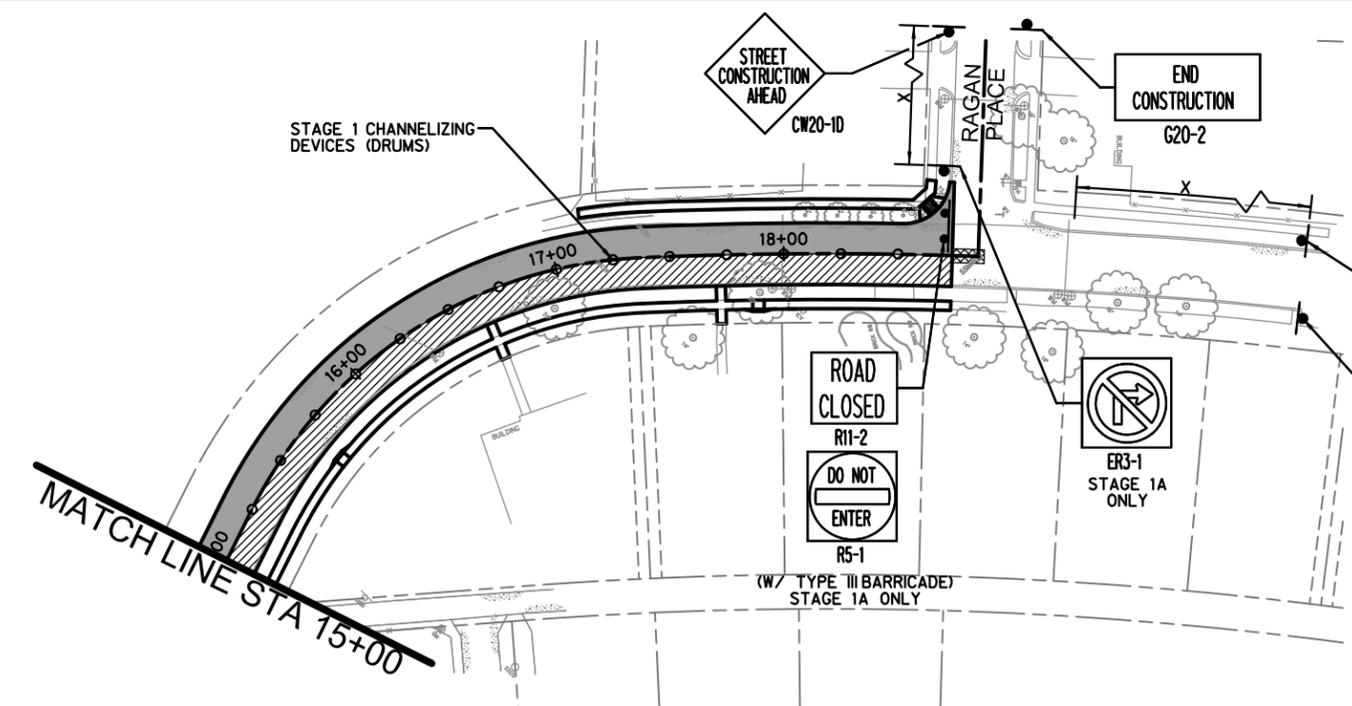
PHASE IV STREET RECONSTRUCTION



POSTED SPEED	X DISTANCE
30	120
35	160

PAVING LEGEND:

	STAGE 1A
	STAGE 1B
	UTILITY CONST.



TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL DEVICES SHOWN ARE TO BE ERECTED DURING PAVING OPERATIONS. DURING EXISTING PAVEMENT REMOVAL AND UTILITY CONSTRUCTION WHILE TRAFFIC IS BEING ALLOWED ON THE SUBGRADE, THE CONTRACTOR SHALL ERECT ROAD CLOSED (R11-2) OR ROAD CLOSED TO THRU TRAFFIC (R11-4) AT THE ENTRANCE OF EACH STREET.
2. SEE SHEET 4 FOR GENERAL NOTES FOR TRAFFIC CONTROL.
3. FOR UTILITY WORK OCCUPYING SMALL AREAS SEE TCP(2-2b) DETAIL.
4. STAGES 1A & 1B MAY BE REVERSED.
5. TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE CONSIDERED AN ESTABLISHED MINIMUM. CONTRACTOR SHALL PROVIDE ADDITIONAL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE TMUTCD IN ORDER TO SAFELY GUIDE TRAFFIC AROUND ACTIVITIES NOT ADDRESSED BY THIS PLAN.
6. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY PRIOR TO BEGINNING WORK.
7. ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

CONSTRUCTION SEQUENCING NOTES:

1. CONSTRUCT UTILITIES. ONLY THE NECESSARY AMOUNT OF EXISTING PAVEMENT SHALL BE REMOVED TO INSTALL THE PROPOSED UTILITIES. UTILITY INSTALLATION AREAS SHALL BE BACKFILLED AND MADE PASSABLE USING AT LEAST 1-INCH OF TEMPORARY HMAC BY THE END OF EACH WORKING DAY. ACCESS TO DRIVEWAYS WILL BE REQUIRED AT ALL TIMES EXCEPT WHEN CROSSING DRIVEWAY WITH THE UTILITY CONSTRUCTION.
2. AFTER UTILITIES HAVE BEEN REPLACED THE ROADWAY SHALL BE PAVED ONE-HALF AT A TIME. IF DRIVEWAYS ARE PRESENT, GRAVEL SHALL BE PLACED IN ORDER TO MAINTAIN ACCESS AT ALL TIMES. EXISTING PAVEMENT ON THE OTHER HALF SHALL REMAIN IN PLACE UNTIL THE FIRST HALF IS COMPLETE. THE PROCEDURE SHALL BE REPEATED FOR THE SECOND HALF.

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869TC01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



Leigh A. Willis
 NAME: Leigh A. Willis
 DATE: 2/20/15
 TBPE FIRM #F-312

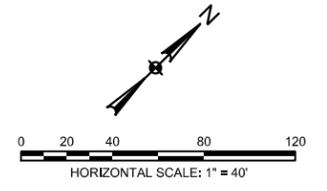
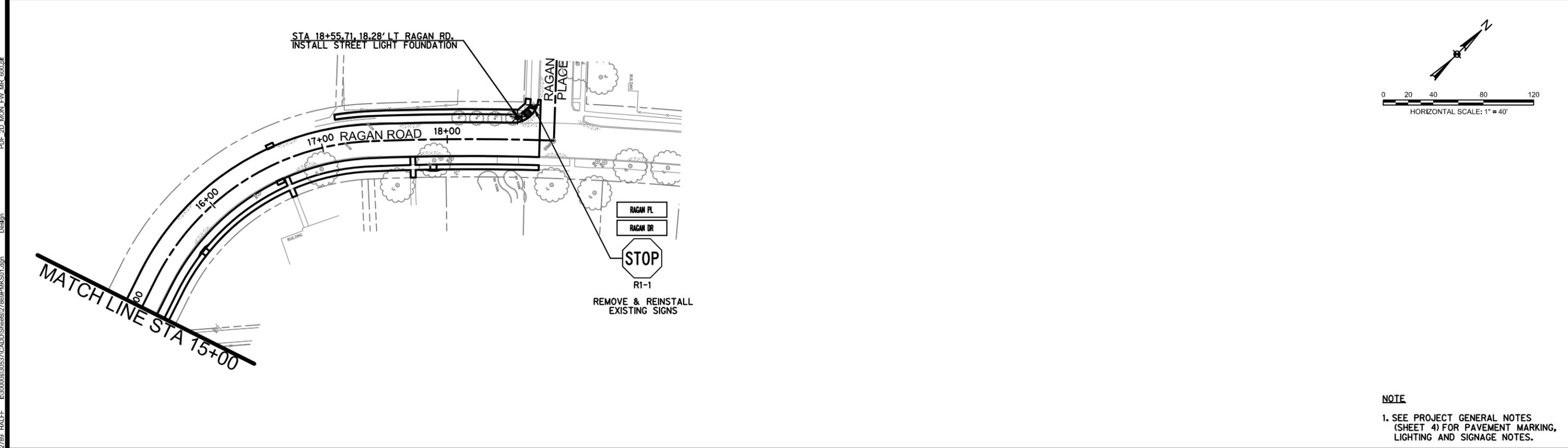
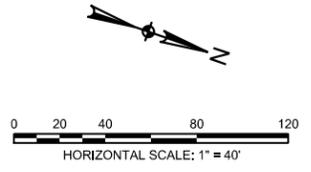
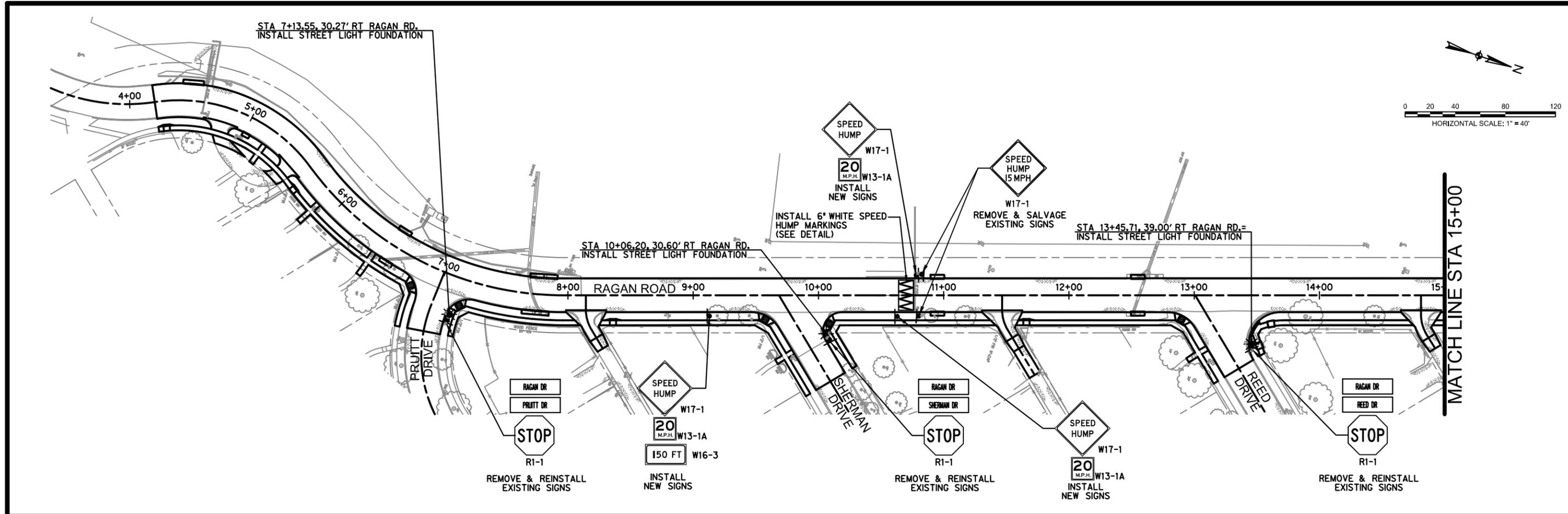


RAGAN ROAD
 TRAFFIC CONTROL PLAN
 PHASE V STREET
 RECONSTRUCTION

SHEET
 79
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

2/17/2015 2:33:09 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\27869PMKS01.dgn



NOTE
 1. SEE PROJECT GENERAL NOTES (SHEET 4) FOR PAVEMENT MARKING, LIGHTING AND SIGNAGE NOTES.

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
B.L.M. CHECKED	FILE: 27869PMKS01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
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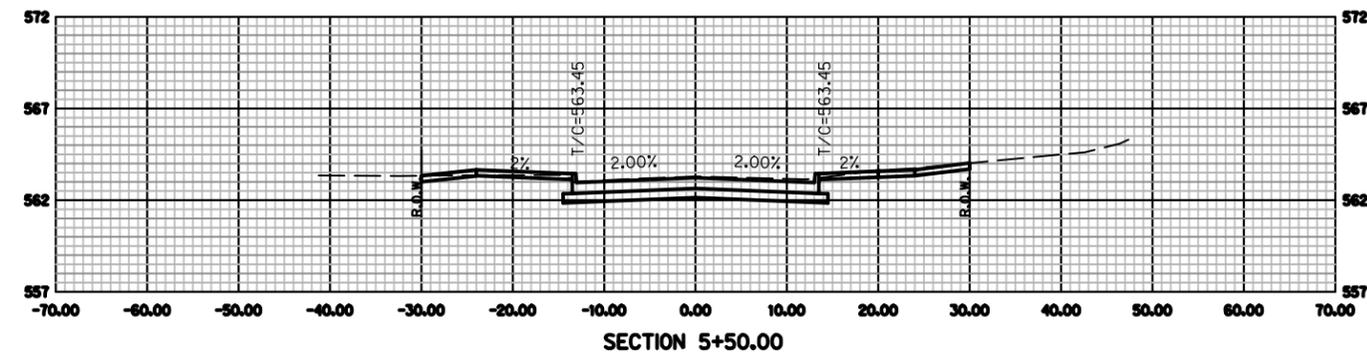
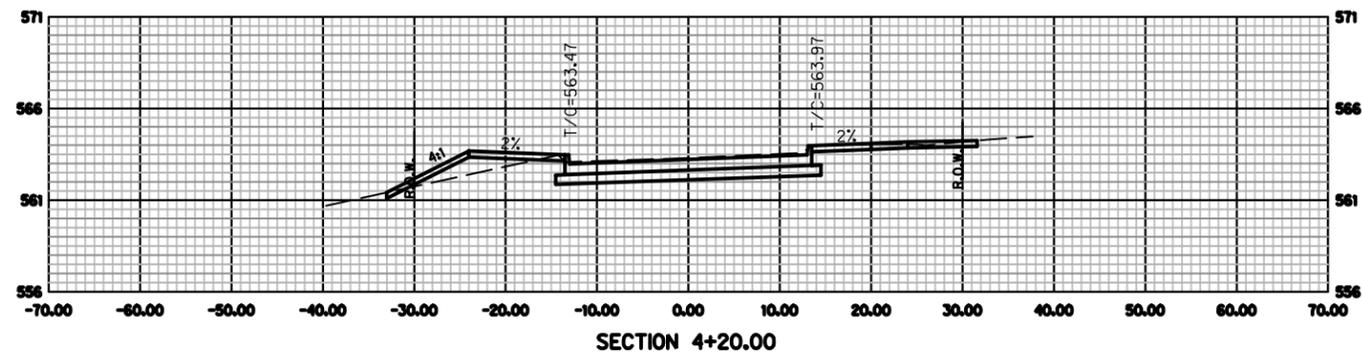
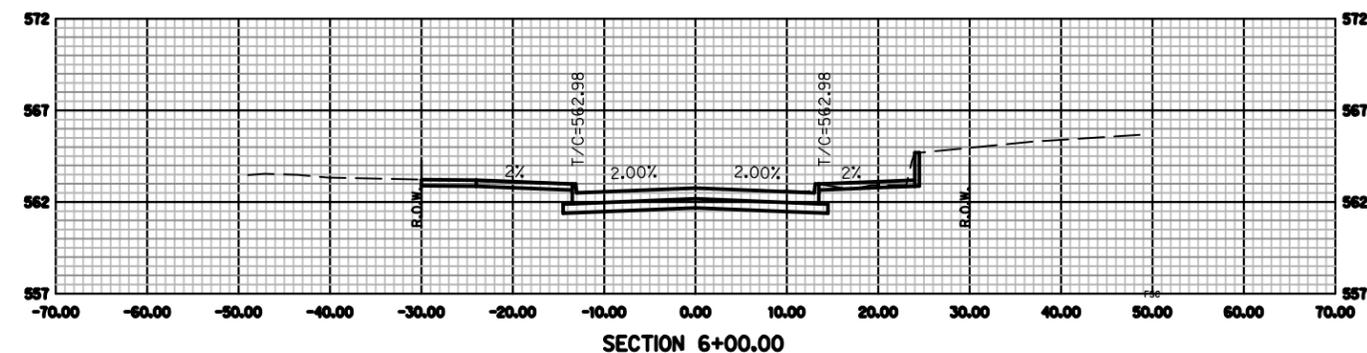
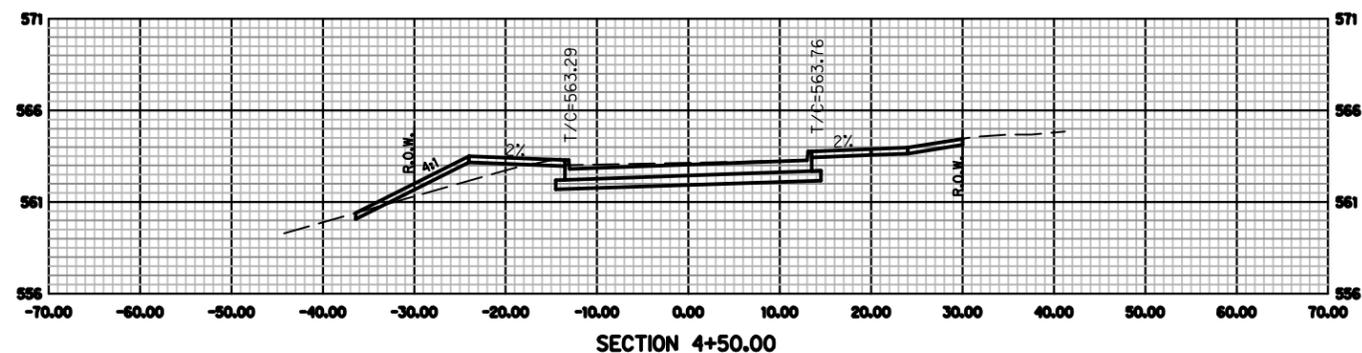
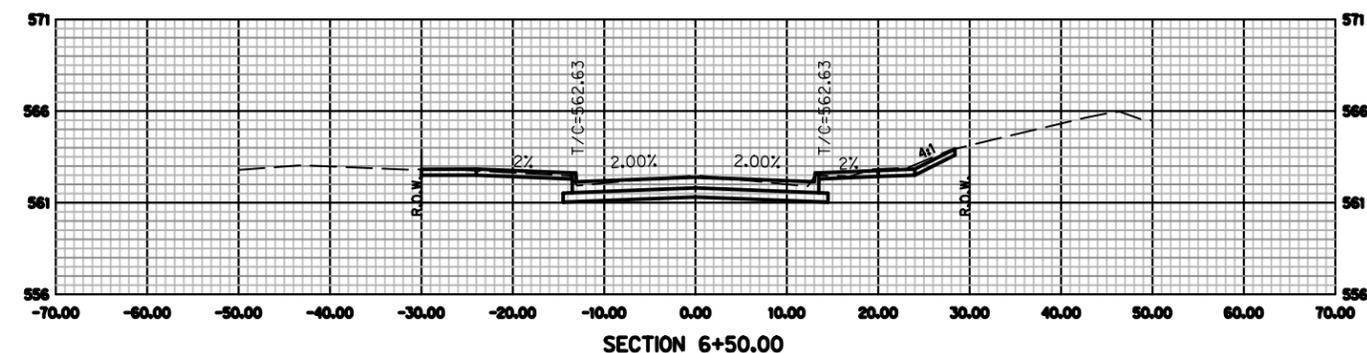
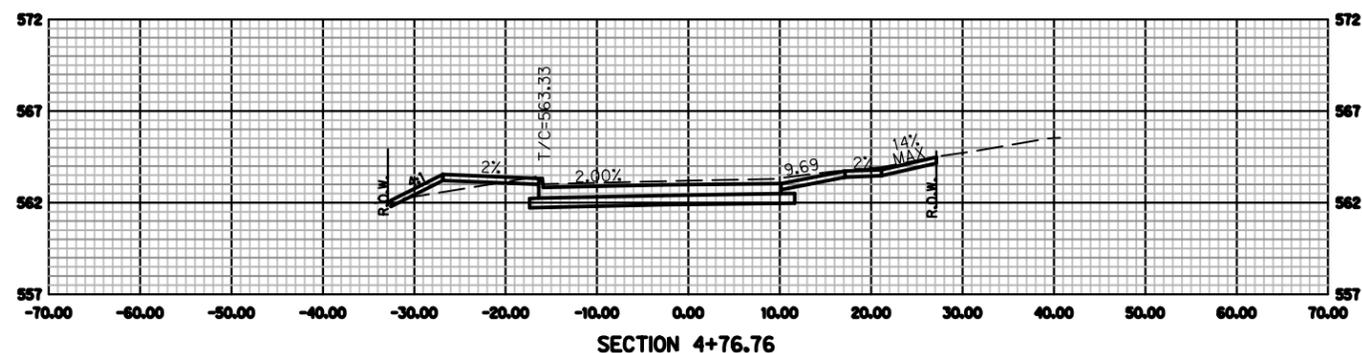
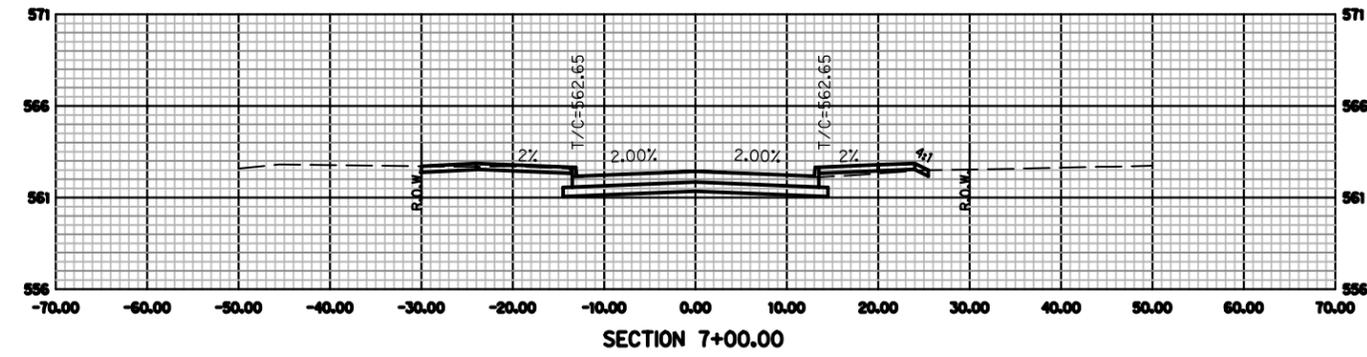
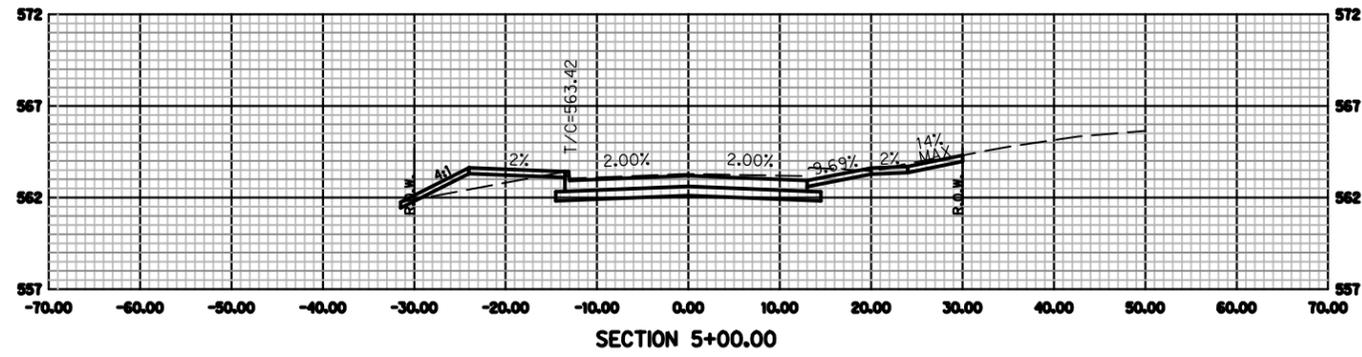
Leigh A. Hollis
 NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



RAGAN ROAD
 PAVEMENT MARKINGS, LIGHTING, AND
 SIGNAGE PLAN
 PHASE V STREET
 RECONSTRUCTION

SHEET
 80
CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:33:11 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD01.dgn Design

NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	



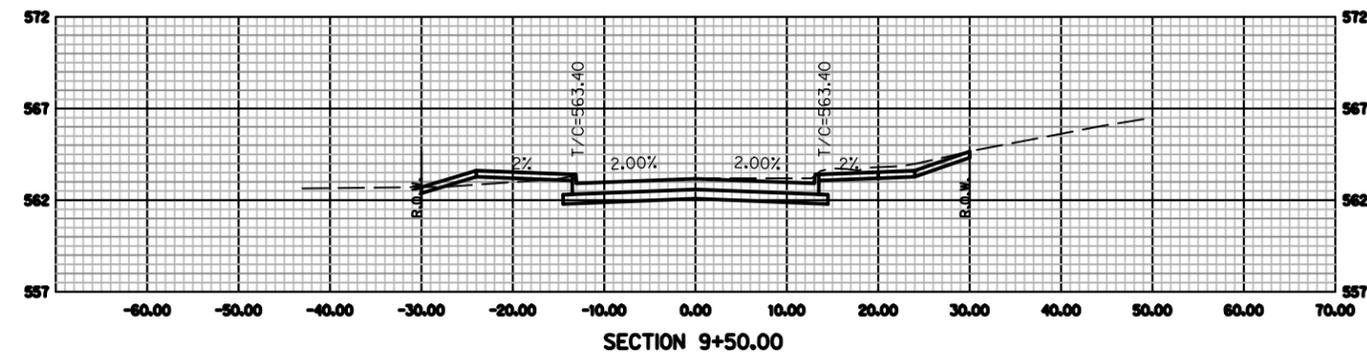
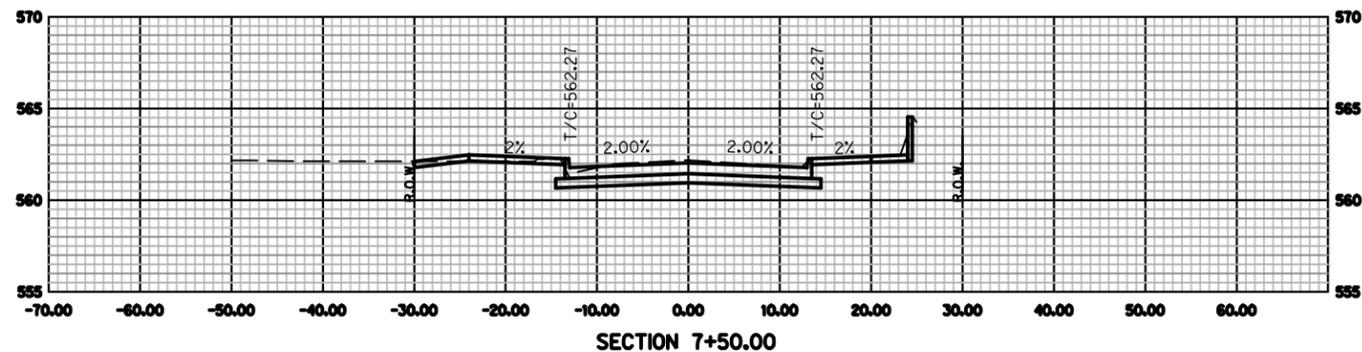
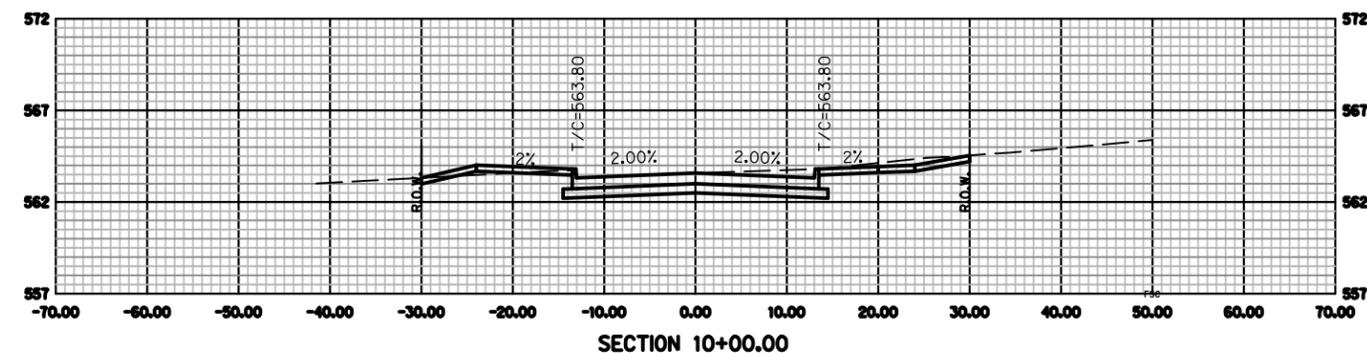
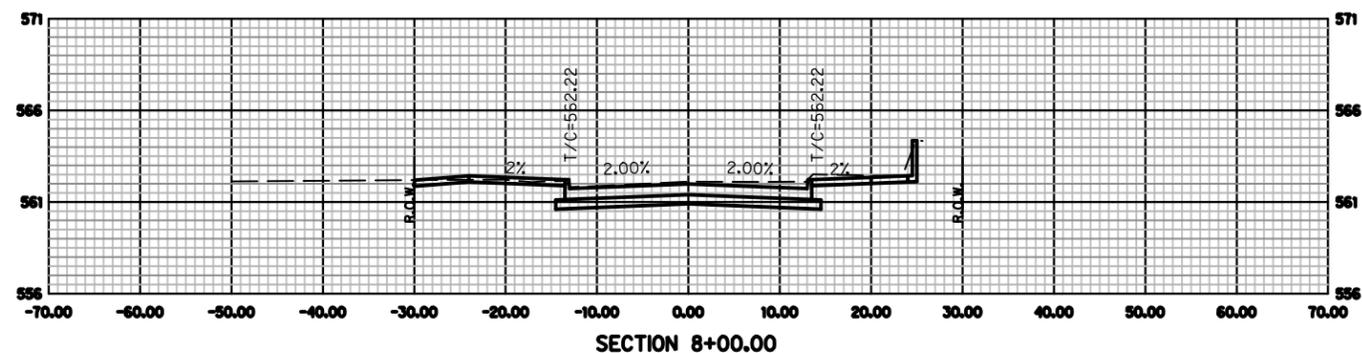
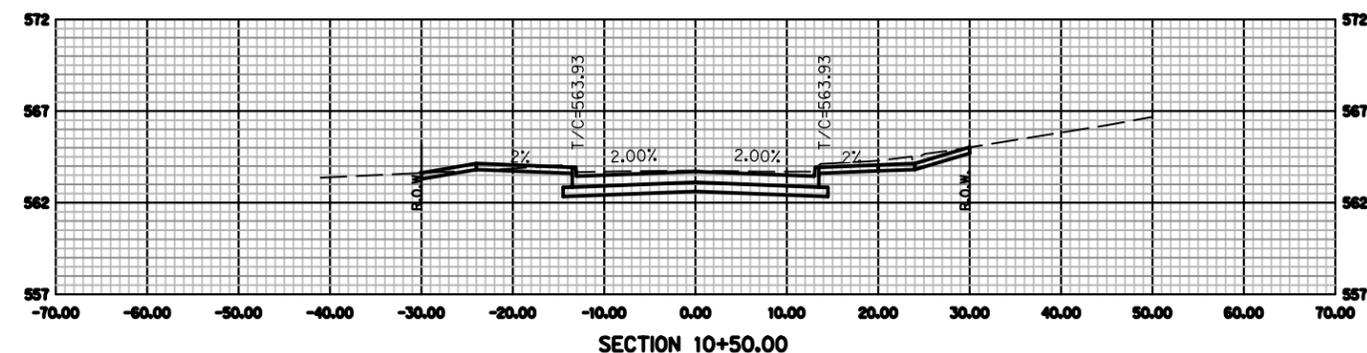
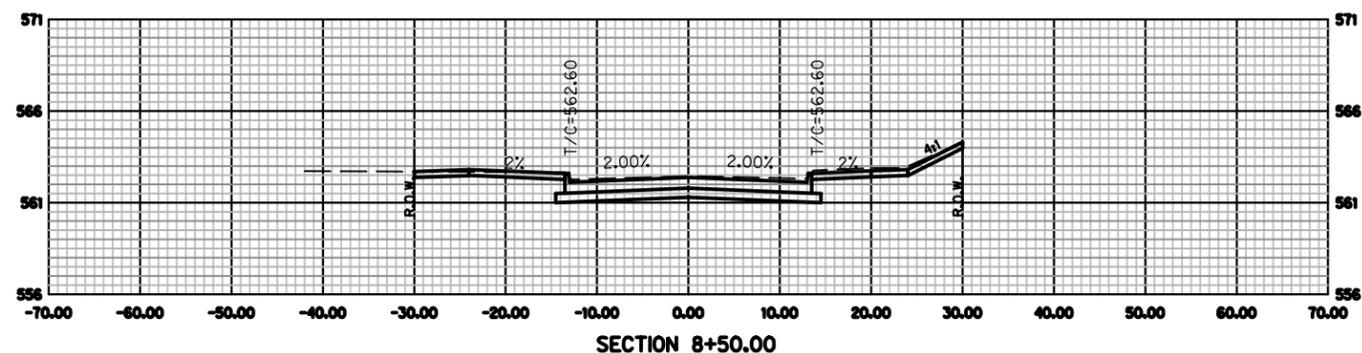
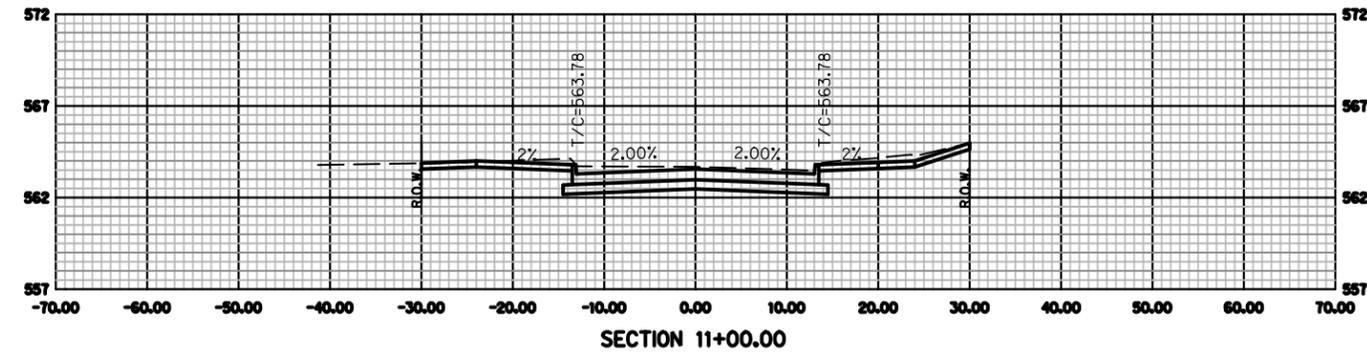
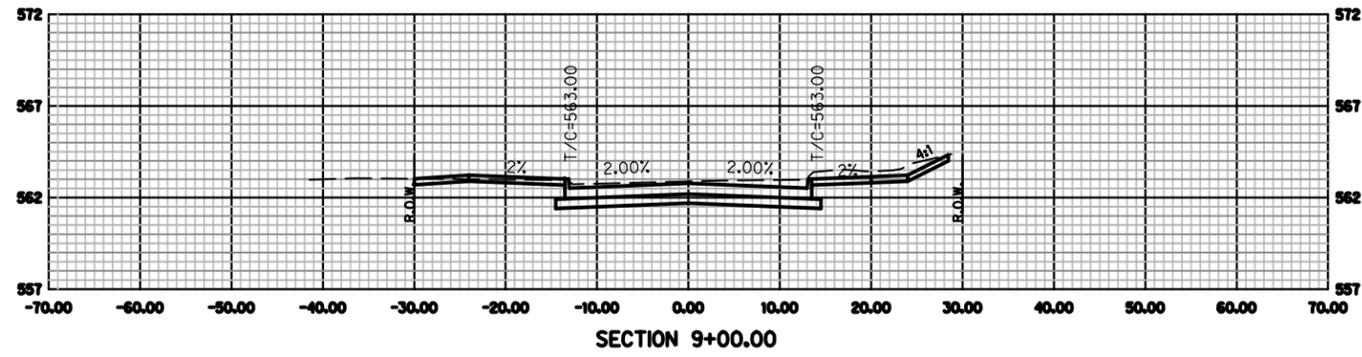
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



RAGAN ROAD
 CROSS SECTIONS
 STA 4+20.02 TO STA 7+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 81
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



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NO.	REVISION	BY	DATE

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CADD DRAWN	
B.L.M. CHECKED	



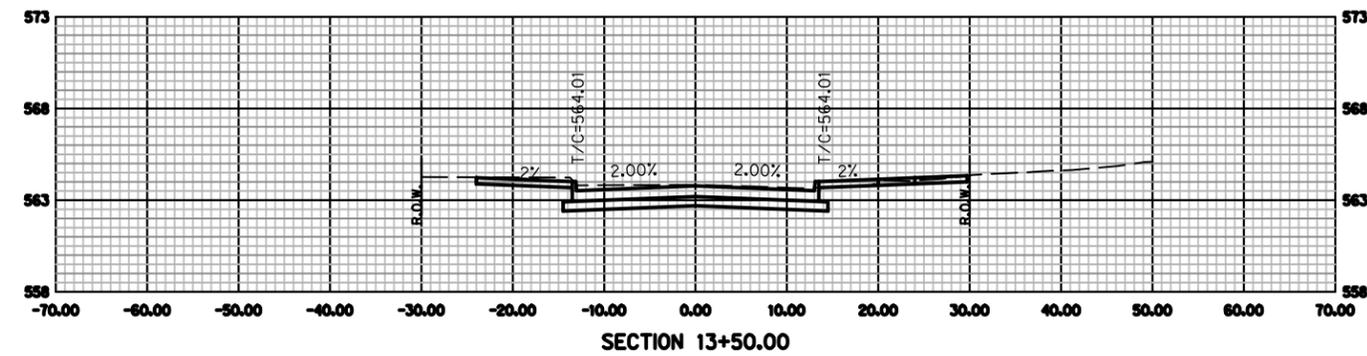
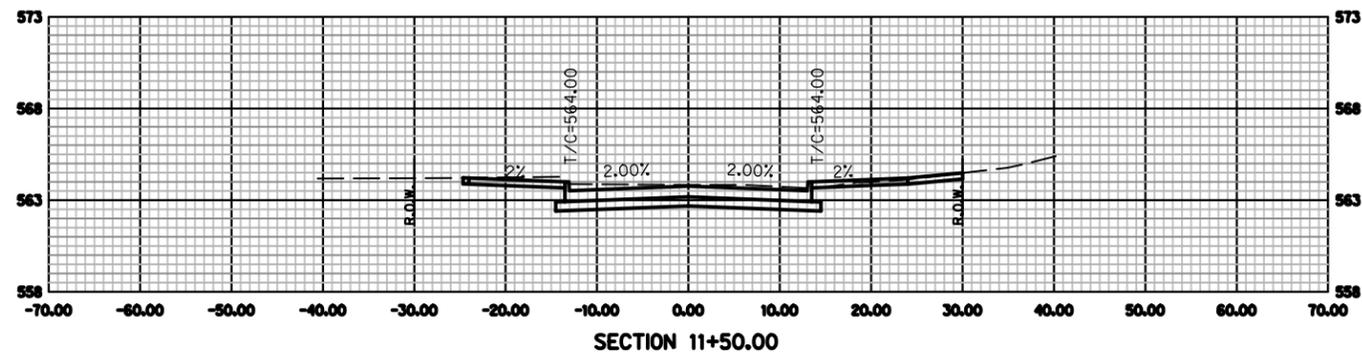
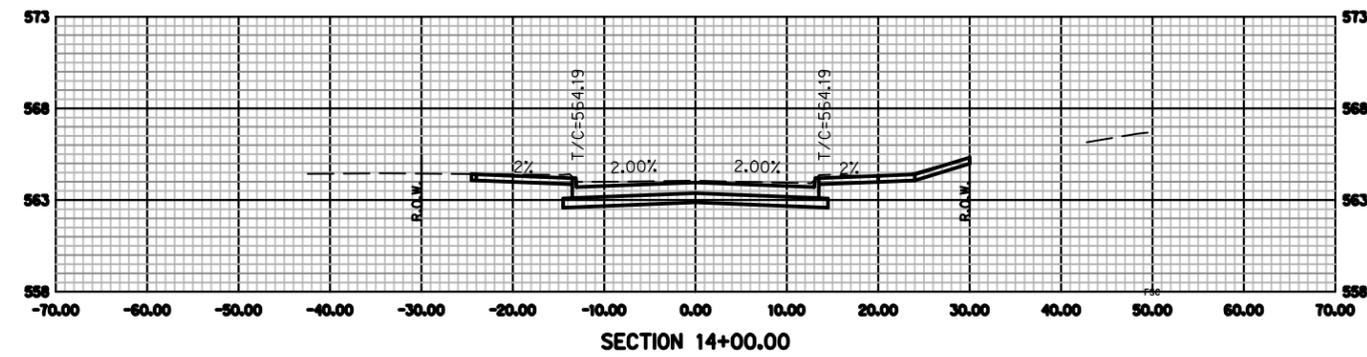
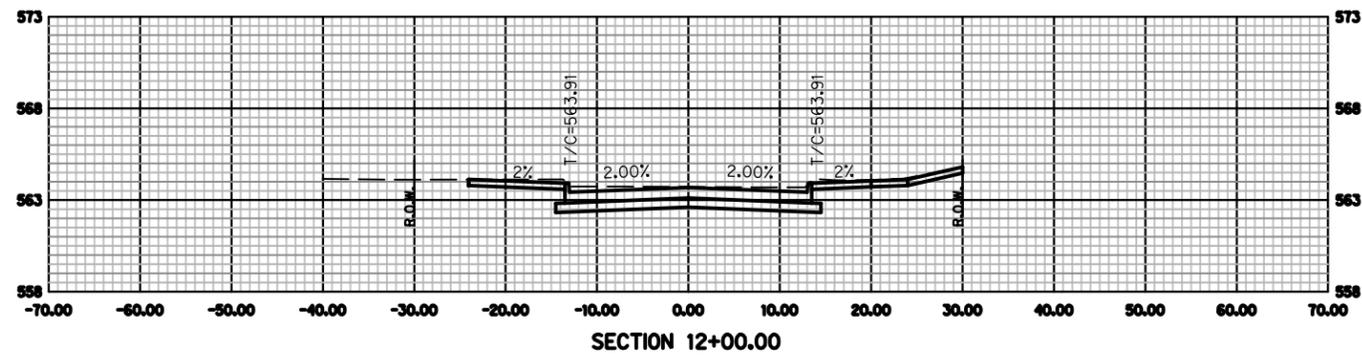
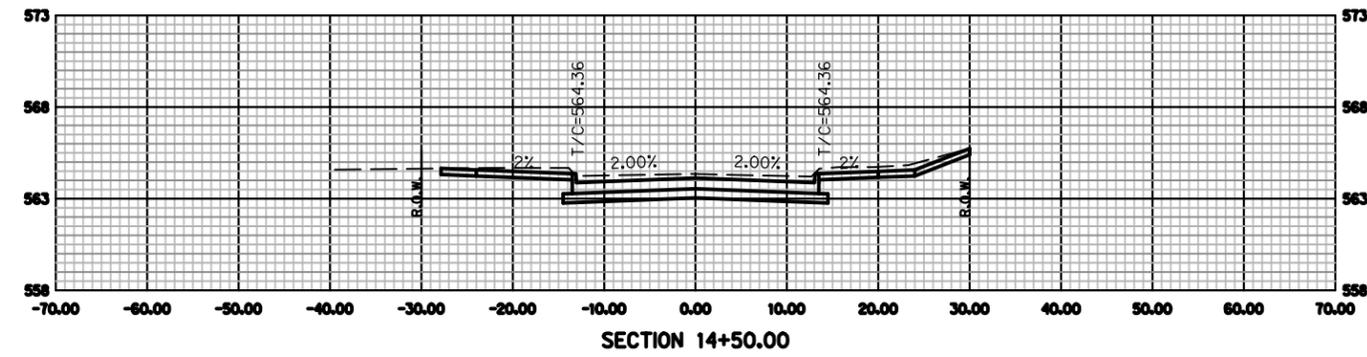
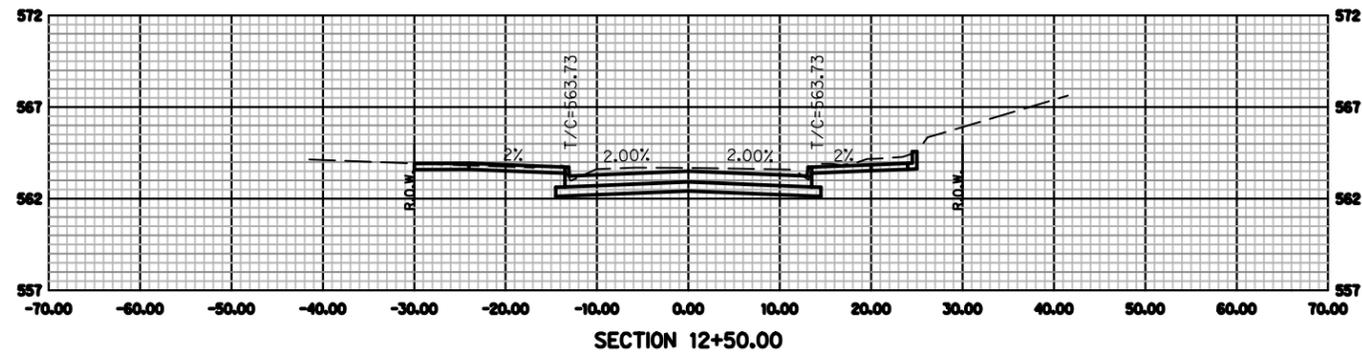
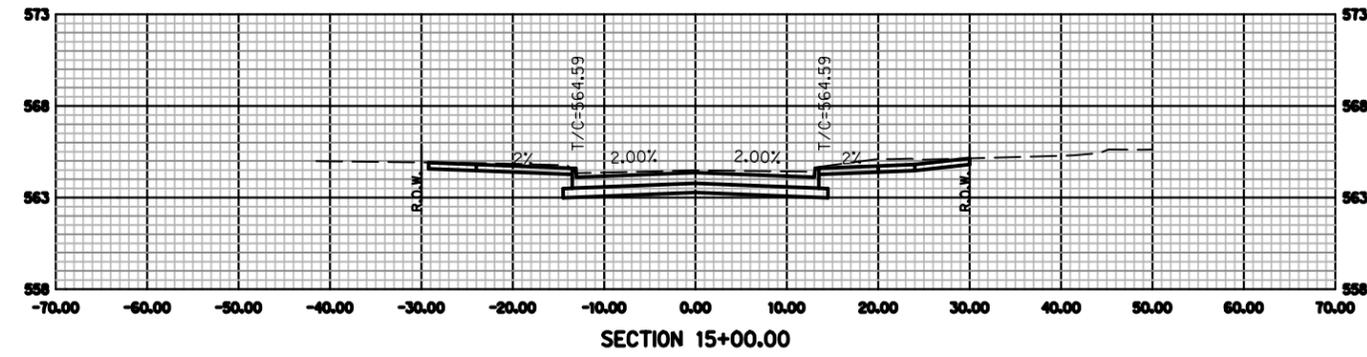
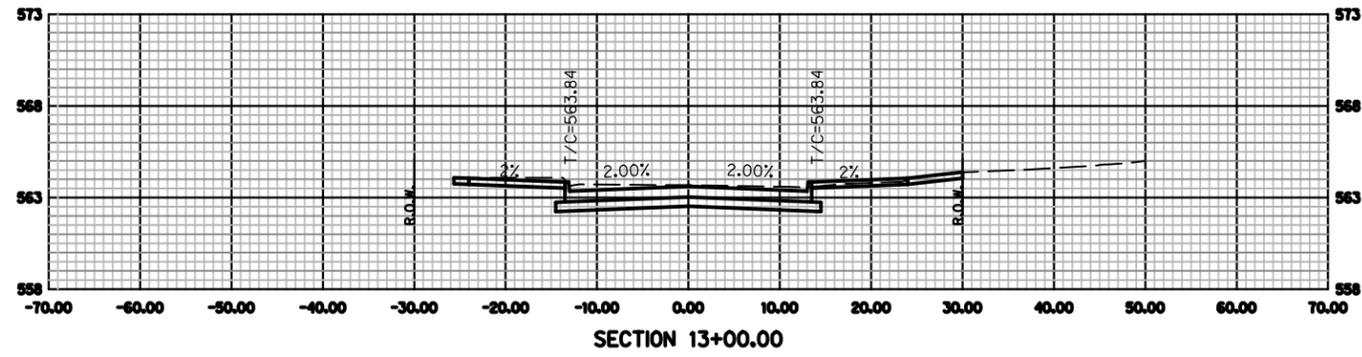
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



RAGAN ROAD
 CROSS SECTIONS
 STA 7+50.00 TO STA 11+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 82
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	HORIZ. : 1" = 10'
B.L.M. CHECKED	VERT. : 1" = 5'
	AVO: 30537
	FILE: 27869XSRD03.dgn



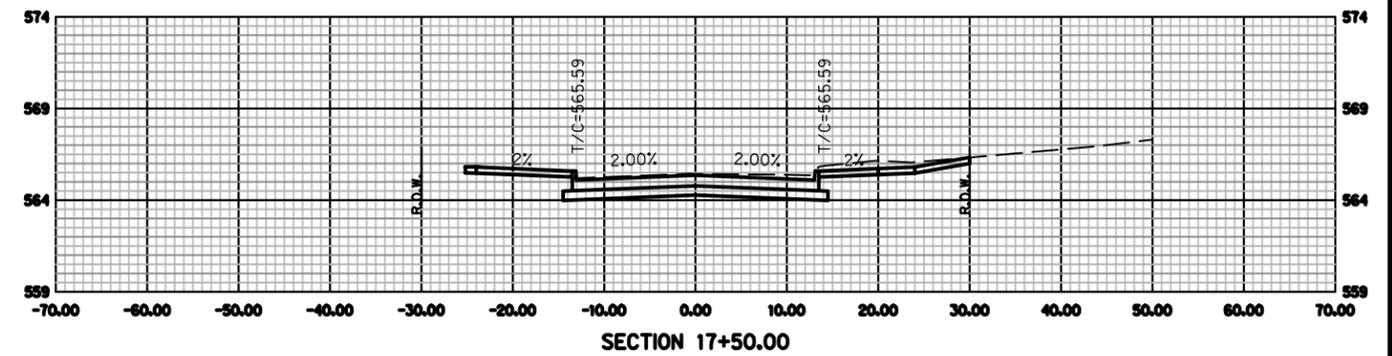
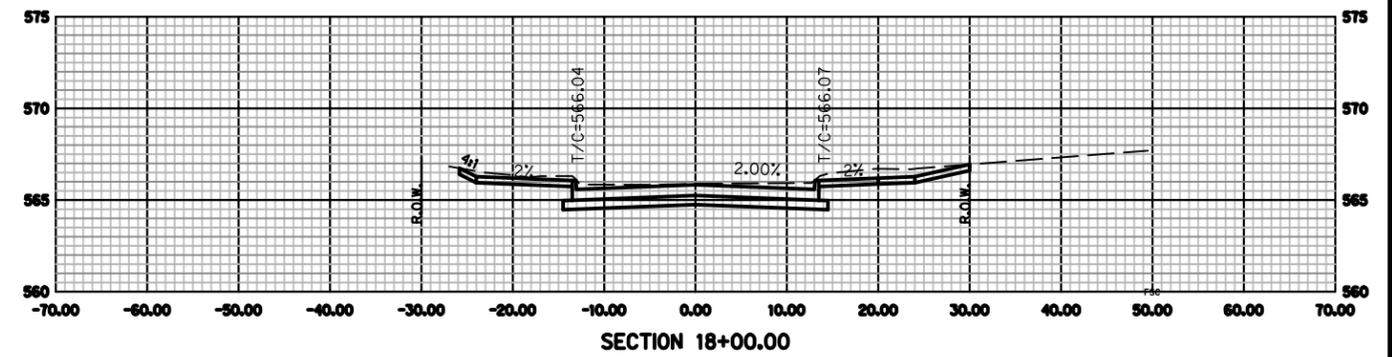
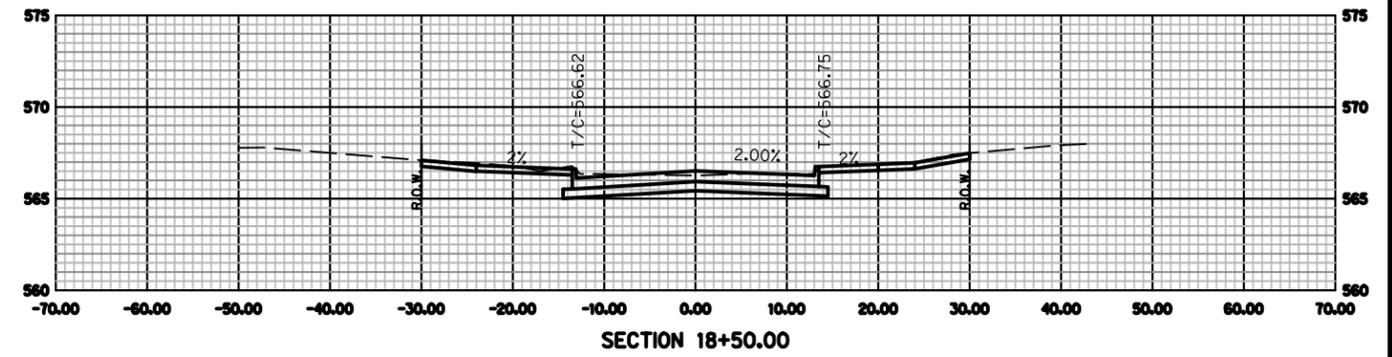
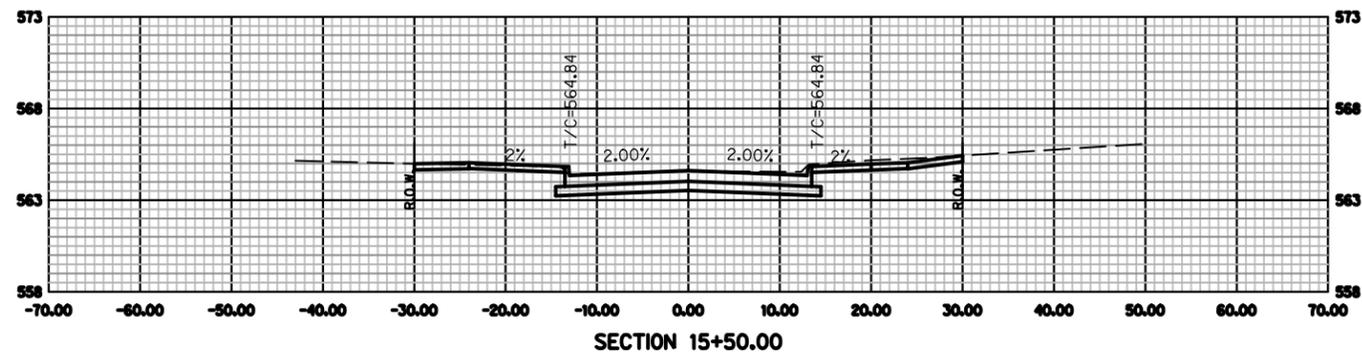
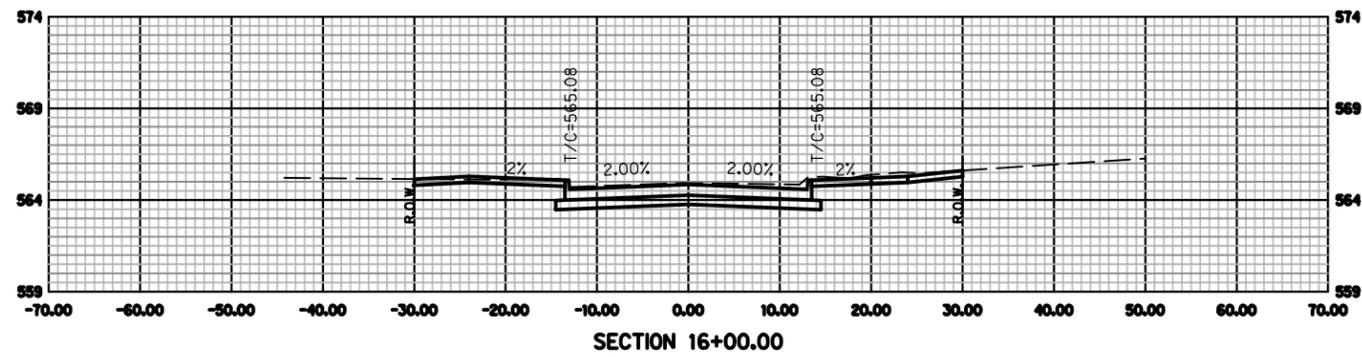
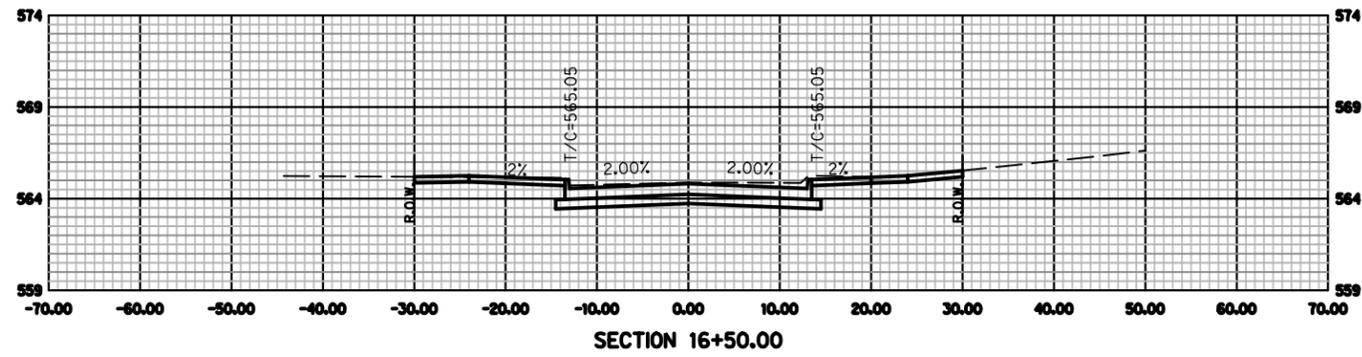
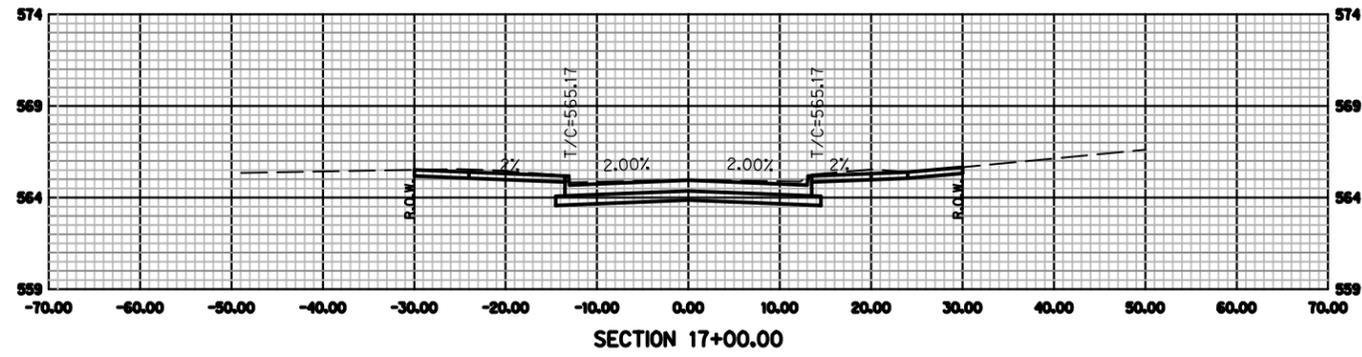
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



RAGAN ROAD
 CROSS SECTIONS
 STA 11+50.00 TO STA 15+00.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 83
 CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



2/17/2015 2:33:25 PM ah2789 HALFF I:\30000s\30537\CADD\Sheets\27869XSRD04.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE HORIZ. : 1" = 10' VERT. : 1" = 5' AVO: 30537 FILE: 27869XSRD04.dgn
CADD DRAWN	
B.L.M. CHECKED	



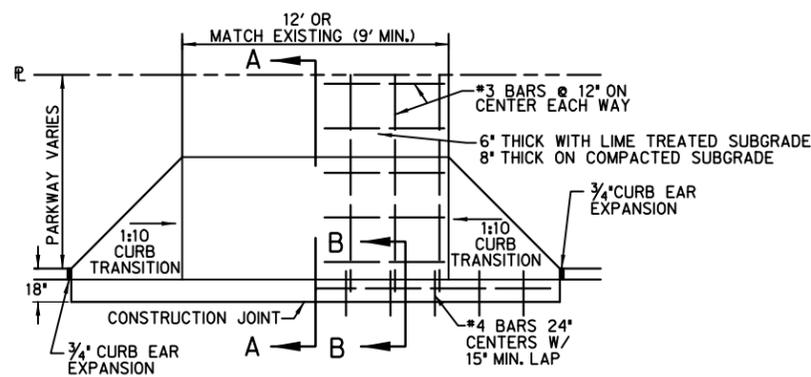
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM *F-312



RAGAN ROAD
 CROSS SECTIONS
 STA 15+50.00 TO STA 18+50.00
 PHASE V STREET
 RECONSTRUCTION

SHEET
 84
CITY BID No.
 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION

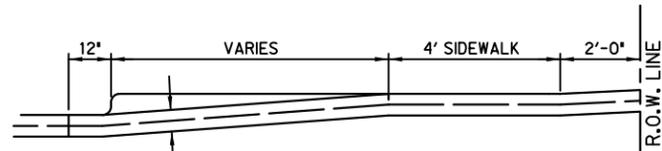


NOTE:

DRIVEWAYS SHALL BE 12 FOOT WIDE OR SHALL MATCH EXISTING (9' WIDE MINIMUM) NEW DRIVES WILL BE CONSTRUCTED TO 5 FOOT B.O.C., IN REPLACING EXISTING DRIVES, THE EXISTING DRIVE WILL BE SAWS AND REMOVED AT A DISTANCE WHICH WILL ASSURE A SMOOTH GRADE, (TO BE SPECIFIED BY THE ENGINEER) AND WILL BE REPLACED TO THAT POINT. GRADE NOT TO EXCEED 1/10 TO THE FOOT RISE.

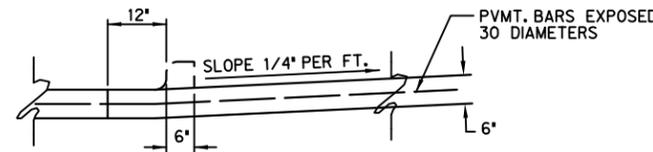
DRIVEWAY DETAIL

NOT TO SCALE



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

NOTE:

CURB, GUTTER, PAVEMENT, AND VALLEY TO BE POURED MONOLITHIC. THE REINFORCED CONCRETE VALLEY SHALL REPLACE THE CONCRETE PAVING WITH THE SUBGRADE AND BASE TREATMENT REMAINING THE SAME IN ACCORDANCE WITH THE TYPICAL PAVING SECTION. THE CONCRETE VALLEY WILL BE CONSTRUCTED ACCORDING TO THE CITY OF THE COLONY PAVING STANDARDS.

P.C. CONCRETE STANDARD RESIDENTIAL, COMMERCIAL & INDUSTRIAL STREETS

GENERAL:

(A) All construction shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the 'Standard Specifications For Public Works Construction - North Central Texas' herein referred to as 'COG' specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817)640-3300.
(B) Refer to COG Division 300 specifications.

SUBGRADE PREPERATION: Refer to COG Item 301 specifications.

LIME STABILIZED SUBGRADE:

(A) Refer to COG Item 301.2 specifications.
(B) Lime shall be placed using the slurry method, to be mixed on-site and not trucked in. Refer to COG Item 301.2.1.1 specifications.

FORMS: Refer to COG Item 303.4.4 specifications.

REINFORCEMENT BARS: Only steel rods shall be used. Refer to COG Item 303.2.9 specifications.

REINFORCEMENT BAR CHAIRS:

(A) The Contractor shall install supporting chairs for reinforcing steel on a one square yard spacing in all concrete pavements. The chairs are to be plastic and installed as per COG Item 303.2.1.1 specifications.

CONCRETE:

(A) Portland Cement shall be as per COG Item 303 specifications.
(B) Up to 20% (by weight) of the cement content may be replaced with Type C fly ash. Refer to COG Item 303.2.4 specifications.
(C) Aggregates shall be as per COG Item 303.2 specifications.
(D) Concrete for all paving and curbs within the Right-of-Way shall have a minimum strength of 4,000 PSI when tested at 28 days.
(E) The Design Engineer and City Engineer shall approve the concrete mix design in writing prior to use.
(F) Slump requirements for Slip Form Paving shall be an average of three inches with a maximum of four inches; for Hand Formed Paving, alleys, sidewalks, and driveways slump shall be an average of four inches with a maximum of five inches. Refer to COG Item 303.3.4.4 specifications.
(G) Pavement curbs shall be poured monolithically. Refer to COG Item 303.5.9 specifications.

CURING:

(A) Refer to COG Item 303.2.13 specifications.
(B) The Contractor shall use a liquid membrane-forming compound as per COG Item 303.2.13.1.1 specifications.

JOINTS:

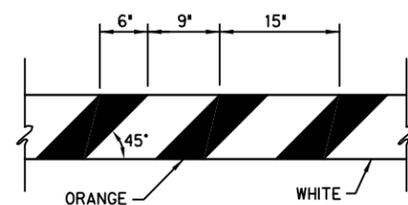
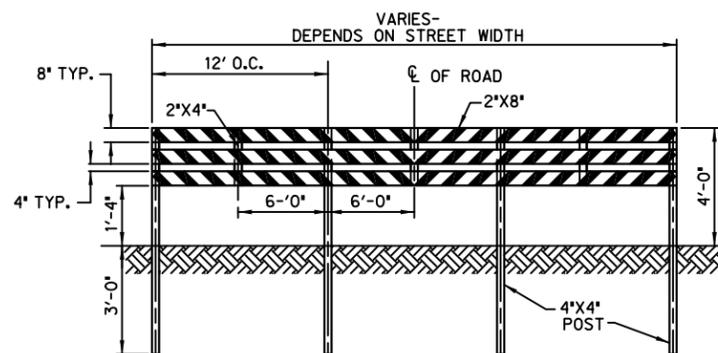
(A) Construction joints shall be used in all Block-outs for driveways, Inlets, Etc.
(B) Transverse joints shall be sawed on 15 foot centers. The concrete saw must be stationed on the job-site prior to placing the pavements. All joints shall be sawed within an eighteen (18) hour period from the time of the pour.
(C) Longitudinal joints shall be sawed based on the following:
25 feet width (Blvd.) Saw joint three inches from the center, 31 feet width (Blvd.) Saw joint along the center, 37 feet width (Blvd.) Two evenly spaced joints, Over 37 feet Width Minimum Two joints - outside joints sawed at 12 feet - 6 inches max.
(D) Saw joints to be 1/4 inch for each inch of pavement thickness.
6 inch pavement = 1 1/2 inch, 7 inch pavement = 2 inches, Etc...
(E) Transverse sawed joints shall be spaced at the following maximum intervals.
6 inch thick pavement = 15 feet, 7 inch thick pavement = 17 feet - 6 inches, 8 inch thick pavement = 20 feet.
(F) The Contractor shall submit a Jointing Plan, for review by the City, prior to placing.

SODDING AND SEEDING:

(A) Parkway and adjacent disturbed areas for paving of roadways in undeveloped areas shall be seeded with Bermuda grass.
(B) Parkway and adjacent disturbed areas for paving of roadways in developed areas shall be block sodded with either Bermuda or St. Augustine to match the adjacent private property.
(C) Medians shall be seeded with Bermuda grass with the placement of straw mats (the mats must not have synthetics to avoid any damage to mowing equipment).
(D) Bermuda must be seeded from April 15 to Sept 15. From Sept 15 to April 15 rye grass will be planted. Rye grass will be killed between the dates of April 15 and May 15. Bermuda grass will then be planted.
(E) All sodding and seeding will be placed on four-inches of topsoil.
(F) The Contractor is responsible for maintenance, including mowing and watering until vegetation is established at not less than 20 plants per square foot area, and until accepted by the City.

TESTING:

(A) The Contractor is responsible for all testing, unless specified otherwise. All reports shall be turned in to the Inspector within 48 hours.
(B) The minimum specified strength shall be achieved for the early use of the pavement. The contractor shall cast test cylinders to check the compressive strength of the concrete for early use of the pavement. Refer to COG Item 303.8.3 specifications.
(C) When required by the City and at the Contractor's expense the Contractor shall core the pavement for thickness and compressive strength. Refer to COG Item 303.8.2 specifications. The following shall be used as a general guide:
• Cored every 175 feet. • 31' Wide pavement : Cored every 150 feet. • 37' Wide pavement : Cored every 125 feet. • 45' and greater width pavement : Cored every 100 feet.

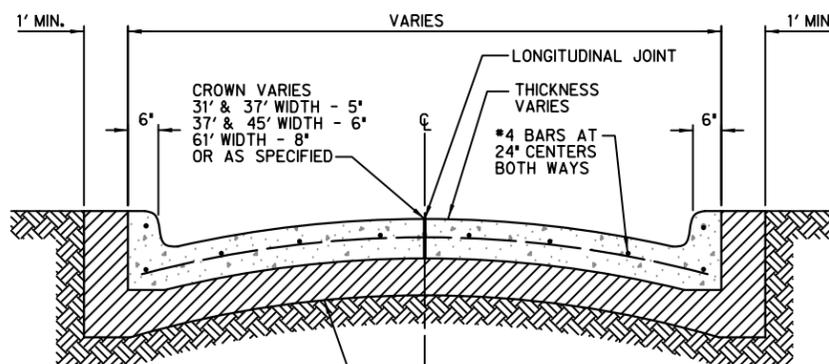


END OF ROAD BARRICADE DETAIL

NOT TO SCALE

NOTES:

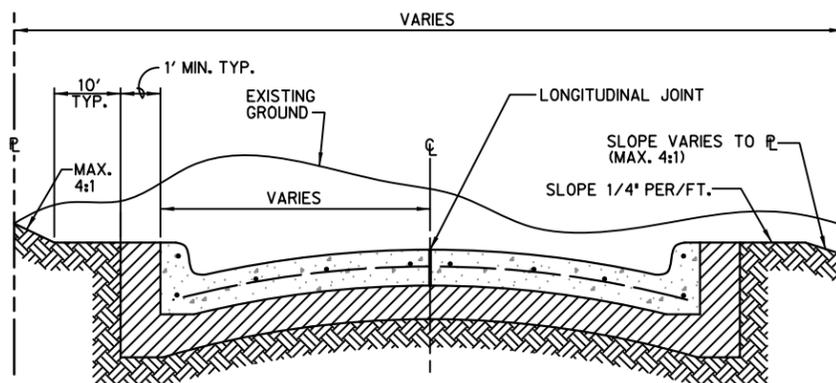
- REFLECTIVE SHEETING FOR ALL TRAFFIC CONTROL DEVICES SHALL BE OF HIGH SPECIFIC INTENSITY (TYPE IIIA OR IIIB) ALL CHANNELIZATION DEVICES SHALL USE TYPE IIIA REBOUNDABLE SHEETING.
- ATTACH 2" X 8" BOARDS TO 4" X 4" POST WITH LAG BOLTS.
- ATTACH 2" X 4" BRACES TO 2" X 8" BOARDS WITH 10d-NAILS.
- BARRICADE TO BE FULL WIDTH OF STREET BACK OF CURB TO BACK OF CURB.
- IF BARRICADE IS USED TO DENOTE END OF ROADWAY, DIAGONAL STRIPES USED SHALL BE RED AND WHITE.



SUBGRADE GRADATION:
MINIMUM PASSING #4 SIEVE 60%
MINIMUM PASSING 1" 100%
6" PREPARED SUBGRADE-COMPACTED TO AT LEAST 95% STANDARD PROCTOR DENSITY AT NOT LESS THAN OPTIMUM MOISTURE WITH 8% LIME SLURRY (36 LBS. PER SQUARE YARD)

**P.C. CONCRETE STANDARDS
RESIDENTIAL, COLLECTOR & MINOR ARTERIAL STREETS**

NOT TO SCALE



LIMITS OF EXCAVATION

NOT TO SCALE



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:

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PAVEMENT STANDARD DETAILS

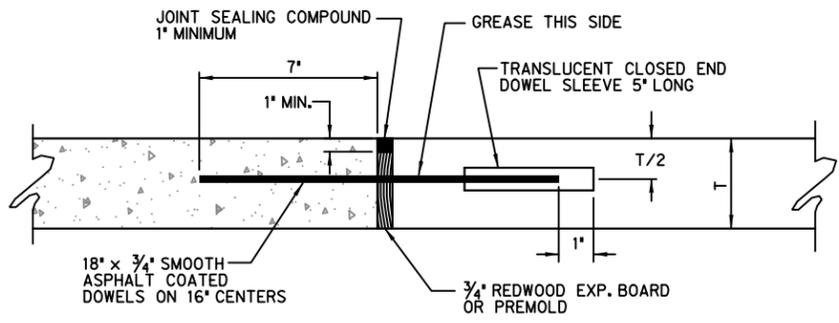
CONCRETE PAVING
(SHEET 1 OF 2)



THE CITY OF THE COLONY
TEXAS

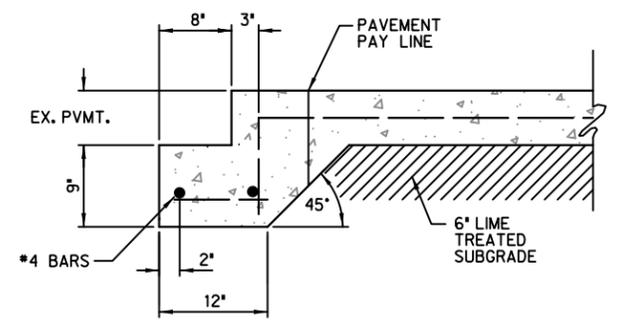
ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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NOTE:
SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16" GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE. EXPANSION JOINTS TO BE CONSTRUCTED A MAXIMUM OF 300' APART ON STRAIGHT PAVING, AND ON ALL PCs, PTs, END OF RETURN OR OTHERWISE SPECIFIED.

EXPANSION JOINT
NOT TO SCALE



NOTE: PAVEMENT BARS TO BE BENT DOWN INTO HEADER AND PAVEMENT TO BE MONOLITHIC

TYPE-A CONCRETE HEADER

NOT TO SCALE

REGIONAL ARTERIALS (R6D-A, & R8D-A)
Use 10-inch reinforced concrete pavement over 4-inch HMAC and 8-inch lime stabilized subgrade.

PRINCIPAL ARTERIALS (6D-B, & 6D-A)
Use 8-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

MINOR ARTERIALS (4D-C & 4U-A & 4U-B)
Use 8-inch reinforced concrete pavement over 6-inch lime stabilized subgrade. Use 8-inch reinforced concrete pavement on streets leading into industrial districts, and on designated truck routes.

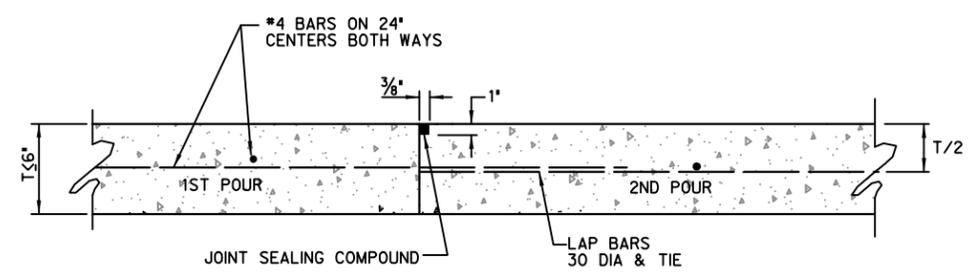
COLLECTORS (2U-C)
Use 7-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

RESIDENTIAL (A)
Use 6-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

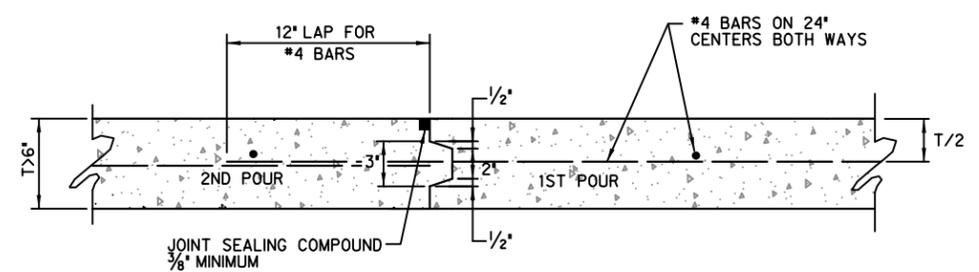
ALLEYS
Use 7-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

PRIVATE PARKING AREAS
Use minimum 5-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

PRIVATE FIRELANE AND DRIVEWAYS
Use 6-inch reinforced concrete pavement over 6-inch lime stabilized subgrade.

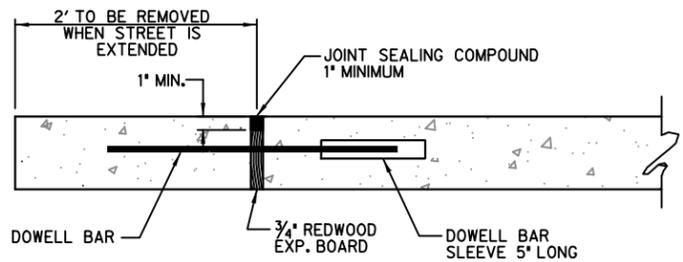


TYPE A
FOR PAVEMENT THICKNESS 6" (OR AS SPECIFIED)



TYPE B
FOR PAVEMENT THICKNESS GREATER THAN 6" (OR AS SPECIFIED)

CONSTRUCTION JOINT
NOT TO SCALE



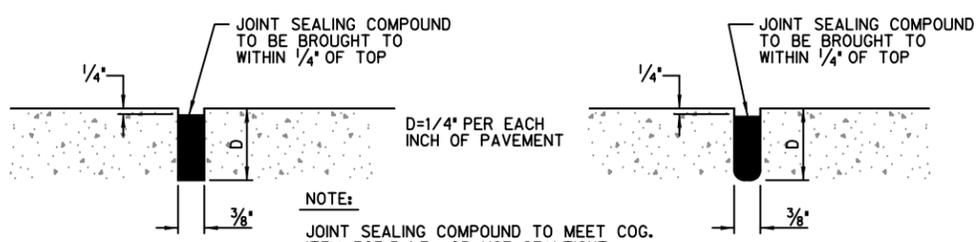
NOTE: TYPE-B HEADER TO BE USED FOR FUTURE STREET EXTENSION OR WHEN SPECIFIED ON PLANS TO BE USED.

TYPE-B CONCRETE HEADER

NOT TO SCALE

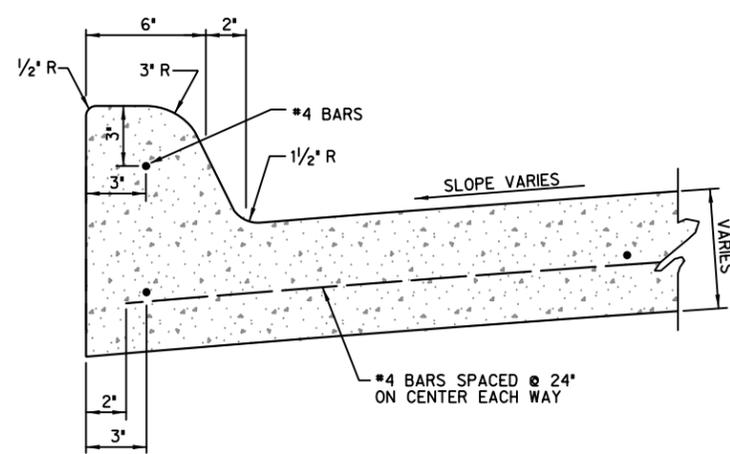
NOTES:
UNLESS TYPE 'A' OR 'B' HEADERS ARE SPECIFIED, WHEN CONSTRUCTING NEW PAVEMENT, THE CONTRACTOR MUST:
A) EXPOSE THE REINFORCING STEEL FROM THE EXISTING PAVEMENT AND TIE IT TO THE PROPOSED STEEL MAT, OR
B) DOWEL #3 REINFORCING STEEL BARS INTO THE EXISTING PAVEMENT A MINIMUM OF (6) SIX INCHES AT 24" CENTERS AND HAVE A MINIMUM OF 15" LAP.

TYPICAL PAVING THICKNESS STANDARDS



NOTE:
JOINT SEALING COMPOUND TO MEET COG. ITEM 303.5.4.7, OR USE SEALTIGHT 164 HOT POUR RUBBER ASPHALTIC SEALING COMPOUND MANUFACTURED BY W.R. MEADOWS INC. OR APPROVED EQUAL.

JOINT SEALING
NOT TO SCALE



6" MONOLITHIC CONCRETE CURB

NOT TO SCALE



NAME: Leigh A. Hollie
DATE: 2/20/15
TBPE FIRM #F-312

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PAVEMENT STANDARD DETAILS						
CONCRETE PAVING (SHEET 2 OF 2)						
THE CITY OF THE COLONY TEXAS						
ENGINEERING DEPARTMENT						
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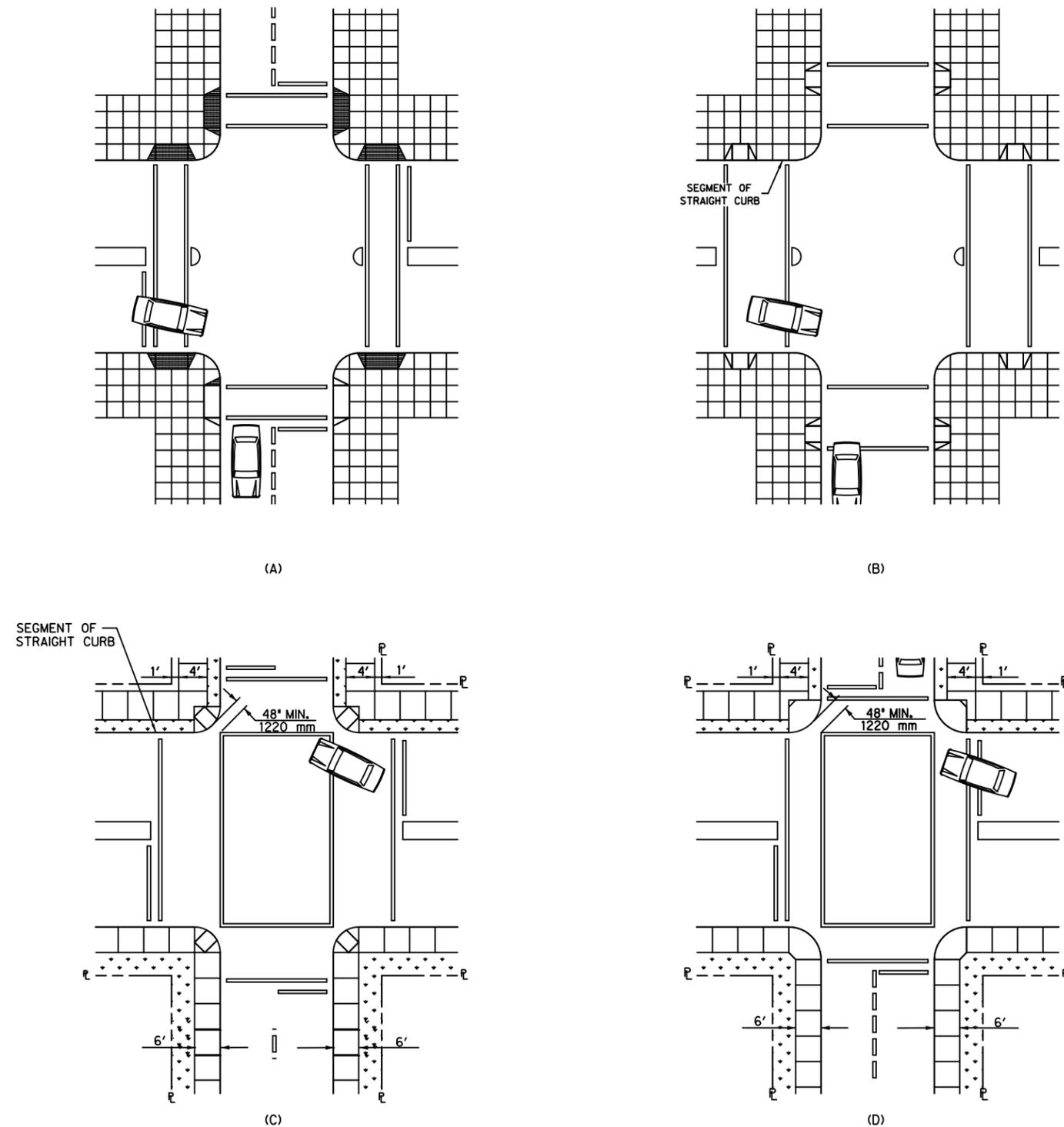


FIGURE 4
CURB RAMPS AT MARKED CROSSINGS

SIDE WALK AND HANDICAP/CURB RAMPS NOTES:

GENERAL REQUIREMENTS:
REQUIREMENTS AND SPECIFICATIONS OF THE TEXAS ACCESSIBILITY STANDARDS AND THE AMERICAN DISABILITIES ACT.

LOCATION:
CURB RAMPS UNDER THESE PROVISIONS, SHALL BE WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB.

SLOPE:
SLOPES ON CURB RAMPS SHALL BE AS FOLLOWS:

- A) THE SLOPE SHALL BE MEASURED AS SHOWN IN FIG. 1
- B) TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
- C) MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20.
- D) THE LEAST POSSIBLE SLOPE SHALL BE USED FOR ANY RAMP. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION SHALL BE 1:12. THE MAXIMUM RISE FOR ANY RUN SHALL BE 30-INCHES (760 MM). CURB RAMPS AND RAMPS TO BE CONSTRUCTED ON EXISTING SITES OR IN EXISTING BUILDING OR FACILITIES MAY HAVE SLOPES AND RISES IF SPACE LIMITATIONS PROHIBIT THE USE OF A 1:12 SLOPE OR LESS, AS FOLLOWS:
 - 1. A SLOPE BETWEEN 1:10 AND 1:12 IS ALLOWED FOR A MAXIMUM RISE OF 6-INCHES.
 - 2. A SLOPE BETWEEN 1:8 AND 1:10 IS ALLOWED FOR A MAXIMUM OF 3-INCHES A SLOPE STEEPER THAN 1:8 IS NOT ALLOWED.

RAMP WIDTH:
THE MINIMUM WIDTH OF A CURB RAMP SHALL BE 36-INCHES EXCLUSIVE OF FLARED SIDES.

SIDEWALK WIDTH:

- 1. THE MINIMUM WIDTH OF ALL SIDEWALKS SHALL BE 4- FEET, ALONG FRONTAGE WITH RESIDENTIAL PROPERTIES AND 5- FEET ALONG COMMERCIAL FRONTAGE, AND TO BE CONSTRUCTED AS PER THE 'SIDEWALK LOCATION DETAIL' ON THIS SHEET.
- 2. MINIMUM 6-FOOT SIDEWALK IS REQUIRED ADJACENT TO THE CURB, WITH THE APPROVAL OF THE TRAFFIC ENGINEER.

SURFACE:
SURFACES OF CURB RAMPS, ALONG ACCESSIBLE ROUTES AND IN ACCESSIBLE ROOMS AND SPACES INCLUDING FLOORS, WALKS, RAMPS, STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM, AND SLIP RESISTANT.

SIDES OF CURB RAMPS:
IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.

THE MAXIMUM SLOPE OF THE FLARE SHALL BE 1:10 (SEE FIG. 2 (A)) CURB RAMPS WITH RETURNED CURBS MAY BE USED WHERE PEDESTRIANS WOULD NOT WALK ACROSS THE RAMP (SEE FIG. 2 (B)) PROVIDE 1/8-INCH TOOLED 1/4-INCH TO 3/4-INCH WIDE GROOVES AT 2-INCH CENTERS.

BUILT-UP RAMPS:
BUILT-UP CURB RAMPS SHALL BE LOCATED SO THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES (SEE FIG. 3) PROVIDE 1/8-INCH TOOLED 1/4-INCH TO 3/4-INCH WIDE GROOVES AT 2-INCH CENTERS.

OBSTRUCTIONS:
CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.

LOCATION AT MARKED CROSSINGS:
CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES (SEE FIG. 4).

DIAGONAL CURB RAMPS:
IF DIAGONAL (OR CORNER TYPE) CURB RAMPS HAVE RETURNED CURBS OR OTHER WELL DEFINED EDGES, SUCH EDGES SHALL BE PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. THE BOTTOM OF DIAGONAL CURB RAMPS SHALL HAVE 48-INCHES (1220 MM) MINIMUM. IF DIAGONAL CURB RAMPS ARE PROVIDED AT MARKED CROSSINGS, THE 48-INCH (1220 MM) CLEAR SPACE SHALL BE WITHIN THE MARKINGS (SEE FIG. 4 (C) AND (D)). IF DIAGONAL CURB RAMPS HAVE FLARED SIDES, THEY SHALL ALSO HAVE AT LEAST A 24-INCH (610 MM) LONG SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING (SEE FIG. (C) ISLANDS).

ANY RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 48-INCHES (1220 MM) LONG BETWEEN THE CURB RAMPS IN THE PART OF THE ISLAND INTERSECTED BY THE CROSSINGS (SEE FIG. 4 (A) AND (B)).

- CONSTRUCTION:**
- (A.) THE CONTRACTOR SHALL SAWCUT, REMOVE AND DISPOSE OFF-SITE THE REQUIRED EXISTING CONCRETE SIDEWALK, CURB AND GUTTER, TO CONSTRUCT THE PROPOSED RAMPS.
 - (B.) CONCRETE SIDEWALKS AND RAMPS SHALL BE MINIMUM 4-INCH THICK, 4,000 PSI, 5 SACK CONCRETE, REINFORCED WITH #3 BARS AT 14-INCH CENTERS BOTHWAYS, PLACED OVER A 2-INCH THICK SAND CUSHION EMBEDMENT.
 - (C.) THE CONTRACTOR SHALL USE 1-INCH PREMOLDED EXPANSION JOINT MATERIAL BETWEEN THE PROPOSED SIDEWALKS AND RAMPS AND AT THE BACK OF CURBS AT NO EXTRA PAY. REDWOOD JOINTS SHALL BE PLACED EVERY 20 FEET FOR 4-FOOT WIDE SIDEWALKS AND EVERY 25 FEET FOR 5 AND 6-FOOT WIDE SIDEWALKS.
 - (D.) DUMMY JOINT REQUIRED EVERY 4- FEET IN 4-FOOT WIDE SIDEWALKS AND EVERY 5- FEET IN 6-FOOT WIDE SIDEWALK.



Leigh A. Hollis
NAME: _____
DATE: 2/20/15
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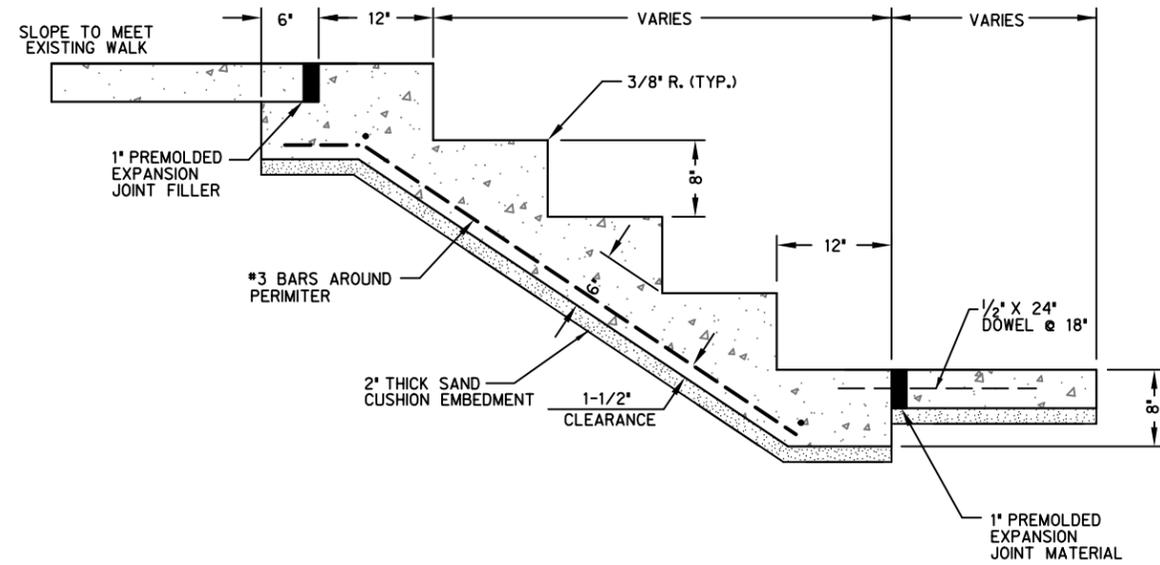
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PAVEMENT STANDARD DETAILS
SIDEWALK AND HANDICAP / CURB RAMPS
(SHEET 1 OF 3)

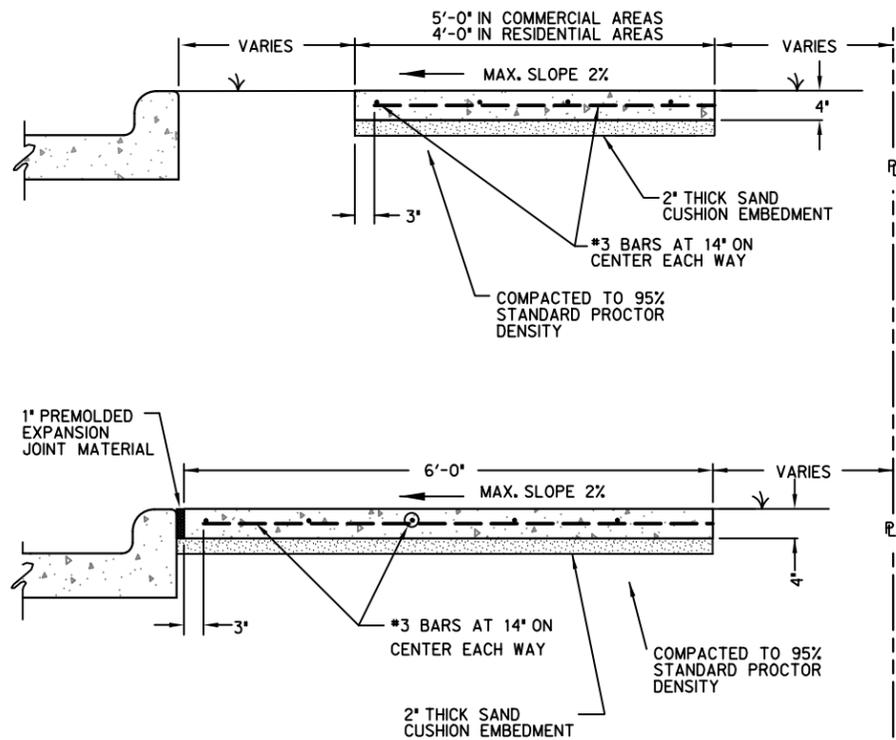


THE CITY OF THE COLONY
TEXAS
ENGINEERING DEPARTMENT

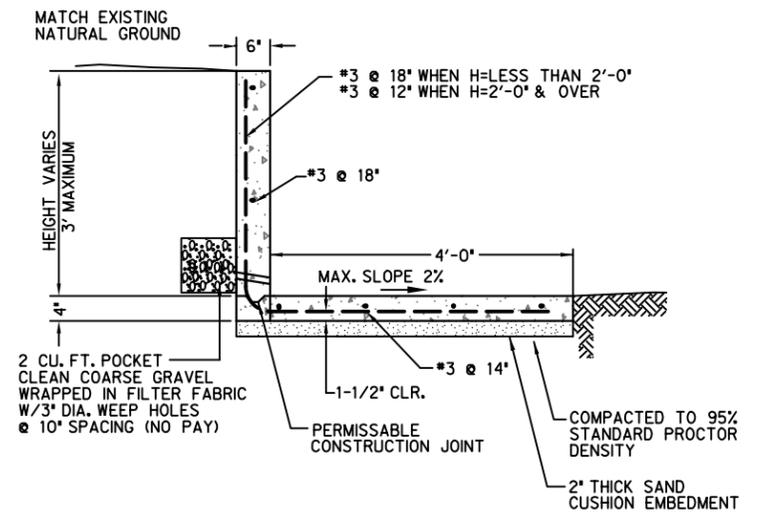
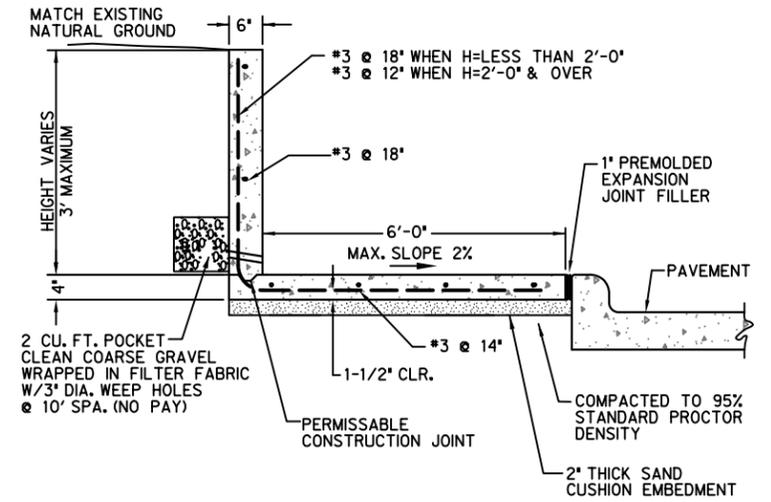
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SIDEWALK STEPS
NOT TO SCALE



SIDEWALK LOCATION DETAIL
NOT TO SCALE



RETAINING WALL PLAN
NOT TO SCALE

NOTE: USE 2" SAND CUSHION UNDER ALL SIDEWALKS.



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PAVEMENT STANDARD DETAILS

SIDEWALK AND HANDICAP / CURB RAMPS (SHEET 2 OF 3)



THE CITY OF THE COLONY
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ENGINEERING DEPARTMENT

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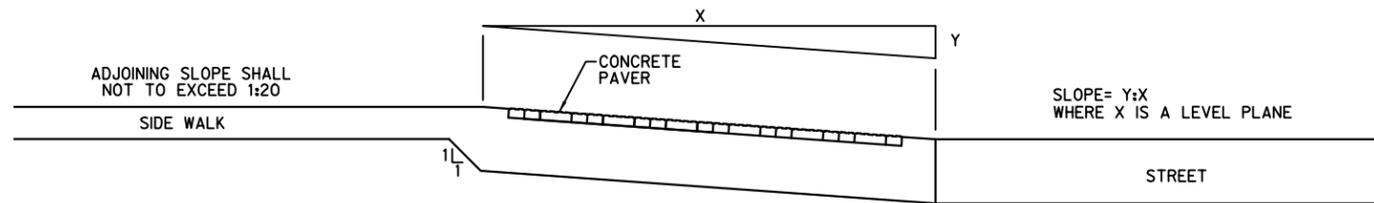
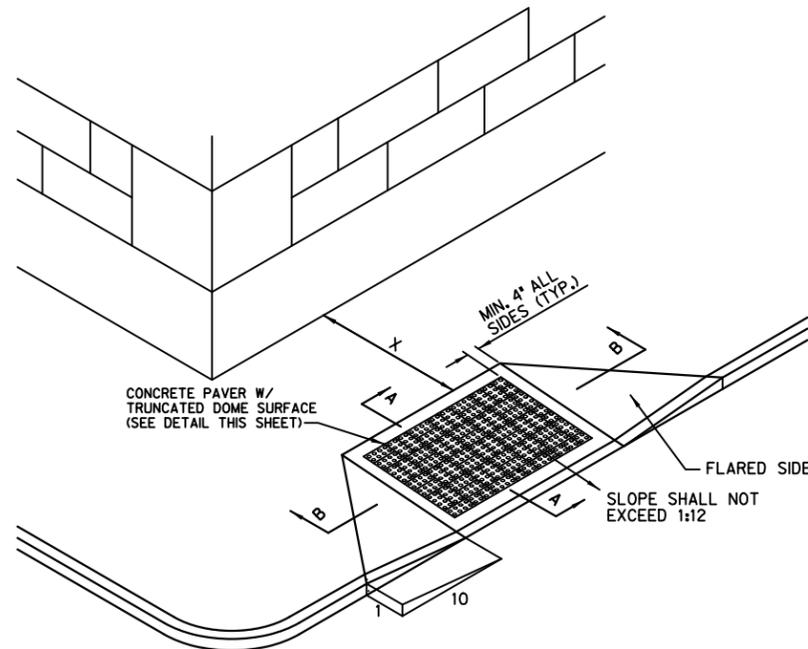


FIGURE 1
MEASUREMENT OF CURB RAMP SLOPES

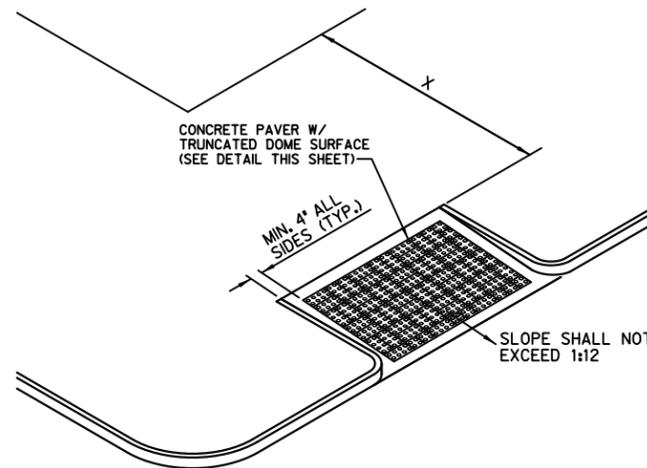
CONCRETE PAVER NOTES:

1. Concrete paver units shall meet all requirements of ASTM C-936, C-33, and shall be laid in a two by two unit basket weave pattern, unless shown otherwise in the plans.
2. Domes shall be aligned in the direction of pedestrian travel.
3. Concrete paver units shall have a truncated dome top surface for detectable warning to pedestrians.
4. Concrete paver unit color for the ramp shall be a contrasting color (red) that provides a light reflective value that significantly contrasts with the adjacent surfaces. The color of the concrete paver units shall be shown elsewhere in the plans. (Adjacent surfaces include side flares).
5. To make ramps contrast visually with adjoining surfaces, use red pigment in concrete at ramp. The red pigment shall be Patterned Concrete Industries, Inc. A-27 dark red. All pigment used on the project must be the same for the entire project.
6. Concrete paver units shall be saw cut only and any cut unit shall not be less than 25 percent of a full unit.



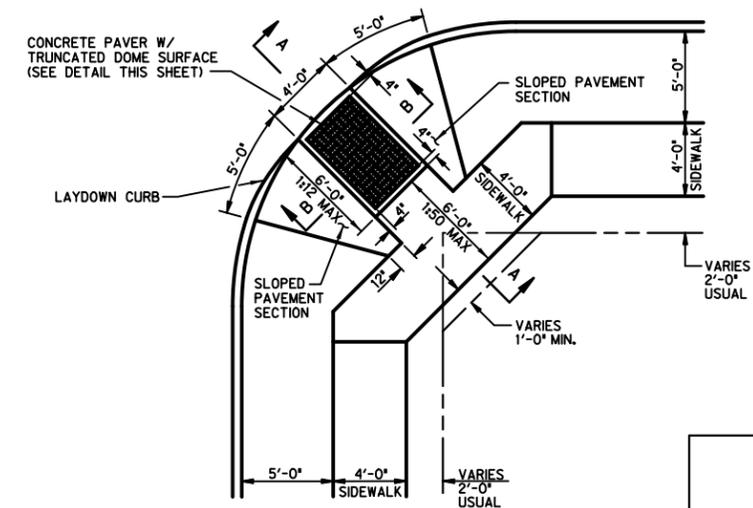
(A)
FLARED SIDES

IF 'X' IS LESS THAN 48' THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 1:12.



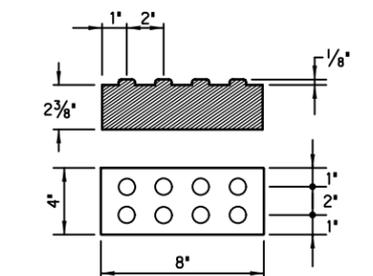
(B)
RETURNED CURB

FIGURE 2
SIDES OF CURB RAMP

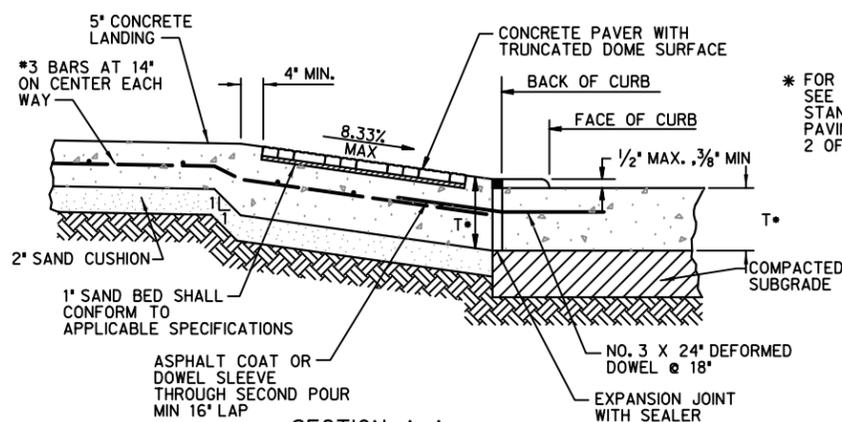


(C)
AT INTERSECTION WITH R.O.W. CLIP

*** NOTE:**
DETECTABLE WARNINGS SHALL EXTEND THE ENTIRE WIDTH OF THE OPENING. NO 4" BORDERS SHALL BE ALLOWED ON THIS PROJECT

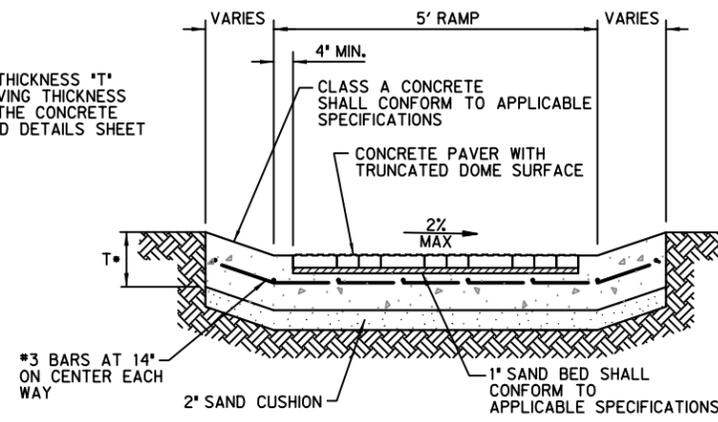


CONCRETE PAVER WITH TRUNCATED DOME SURFACE
DETAIL
NOT TO SCALE



SECTION A-A
NOT TO SCALE

* FOR PAVEMENT THICKNESS 'T' SEE TYPICAL PAVING THICKNESS STANDARDS ON THE CONCRETE PAVING STANDARD DETAILS SHEET 2 OF 2.



SECTION B-B
NOT TO SCALE



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PAVEMENT STANDARD DETAILS

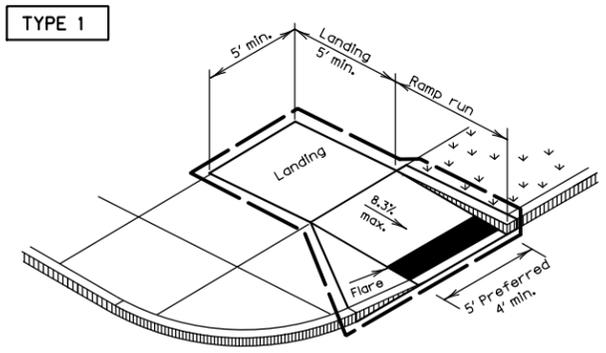
SIDEWALK AND HANDICAP / CURB RAMPS
(SHEET 3 OF 3)



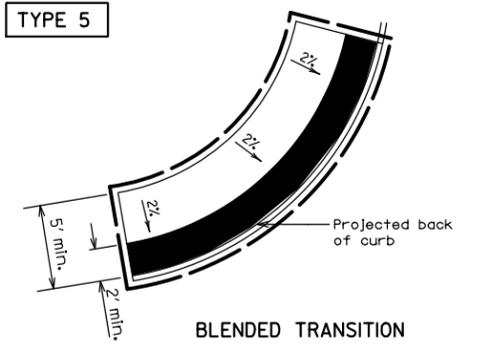
THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

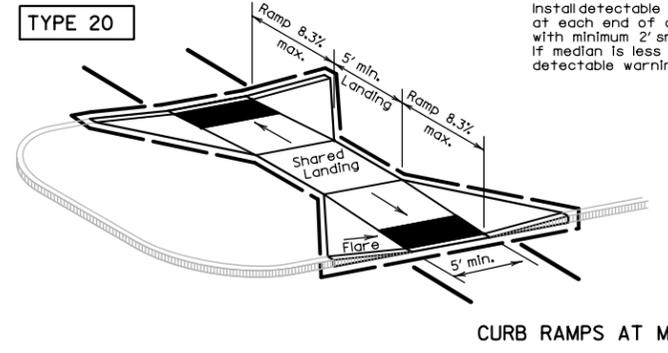
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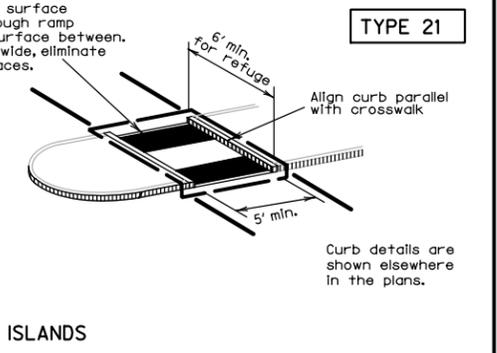
PERPENDICULAR CURB RAMP



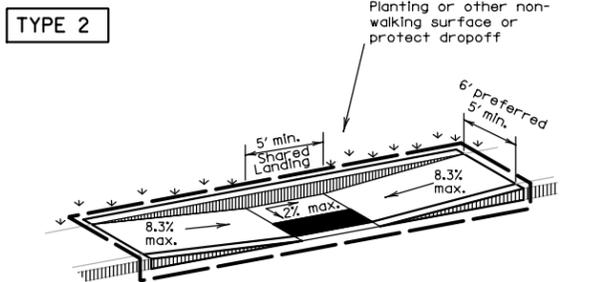
BLENDED TRANSITION



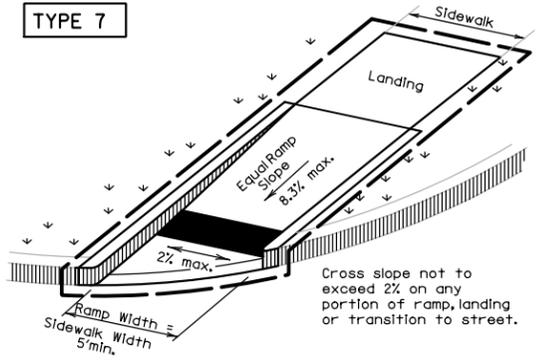
CURB RAMPS AT MEDIAN ISLANDS



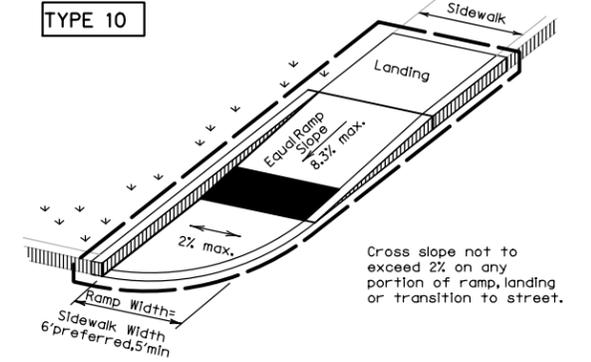
Curb details are shown elsewhere in the plans.



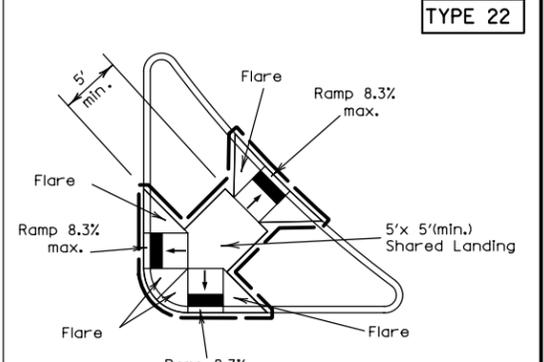
PARALLEL CURB RAMP
(Use only where water will not pond in the landing.)



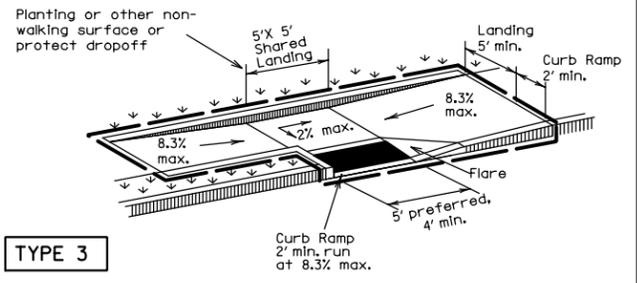
(Sidewalk set back from curb)
DIRECTIONAL RAMPS WITHIN RADIUS



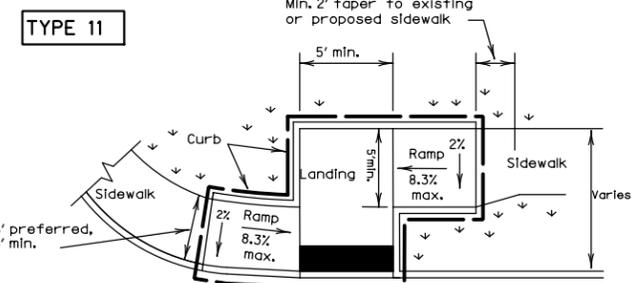
(Sidewalk adjacent to curb)



COMBINATION ISLAND RAMPS

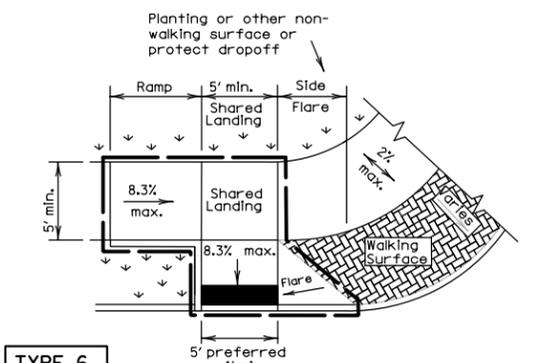


TYPE 3



TYPE 11

OFFSET PARALLEL CURB RAMP



TYPE 6

COMBINATION CURB RAMPS

NOTES / LEGEND:
See General Notes on sheet 2 of 4 for more information.
 V V Denotes planting or non-walking surface not part of pedestrian circulation path.
 — Ramp Limits of Payment
 ■ Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation
 Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CR: RM	DW: TxDOT	CK: VP
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY	SHEET NO.	

2/17/2015 2:33:36 PM ah2789 HALFF R:\30000s\30537\CADD\Sheets\72769DTPV07.dgn Design

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
FILE: 72769DTPV07.dgn	

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

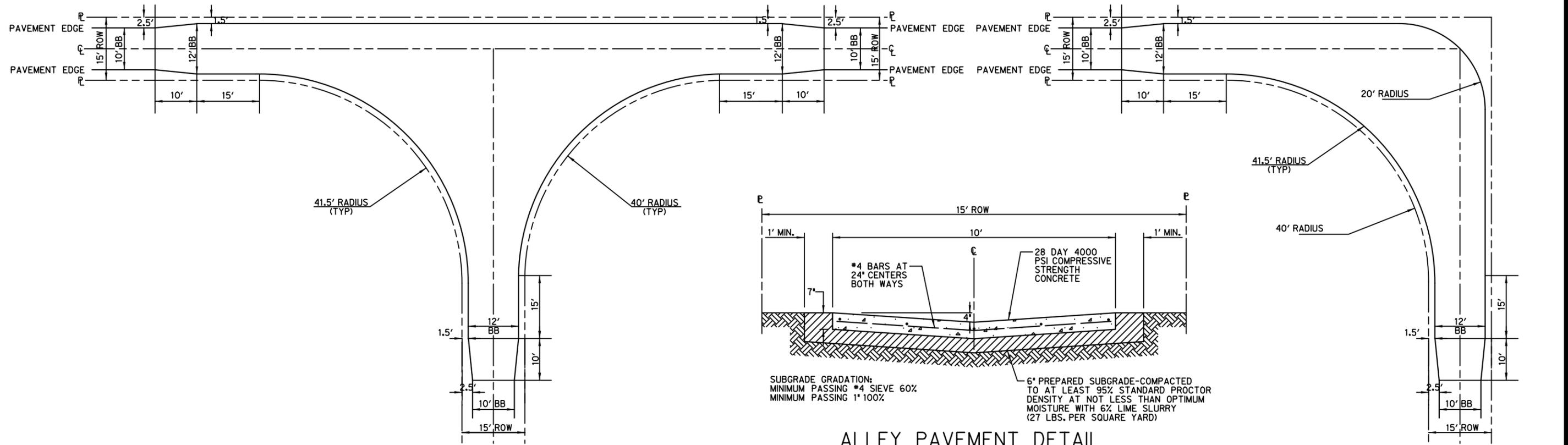


NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

PEDESTRIAN FACILITIES CURB RAMPS
 PHASE V STREET RECONSTRUCTION

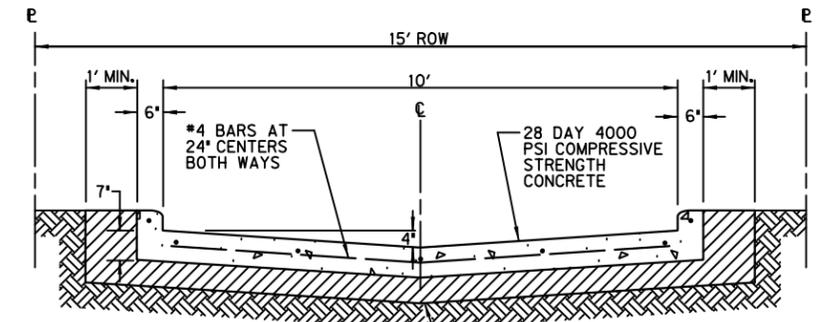
SHEET 90
 CITY BID No. 69-11-15-PHASE V



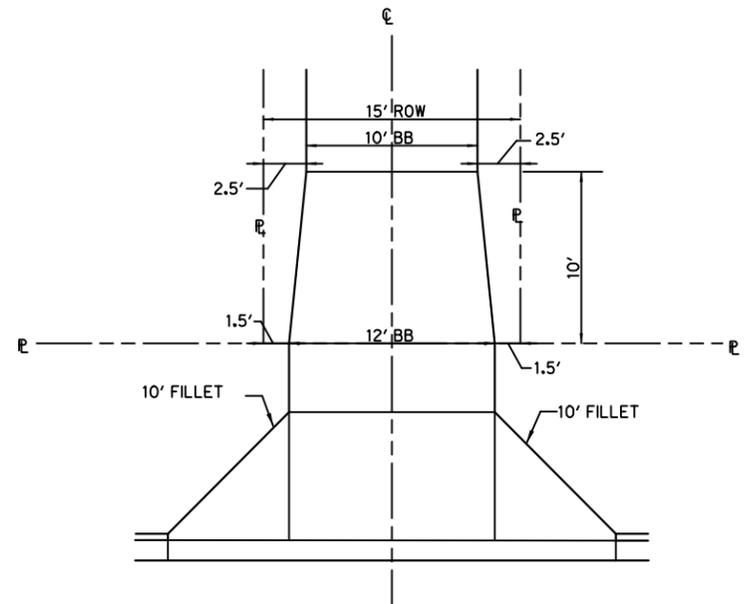
ALLEY INTERSECTION TYPE "A"

ALLEY PAVEMENT DETAIL
NOTE: SAME INVERT ON 12' WIDTH ALLEY PAVEMENT

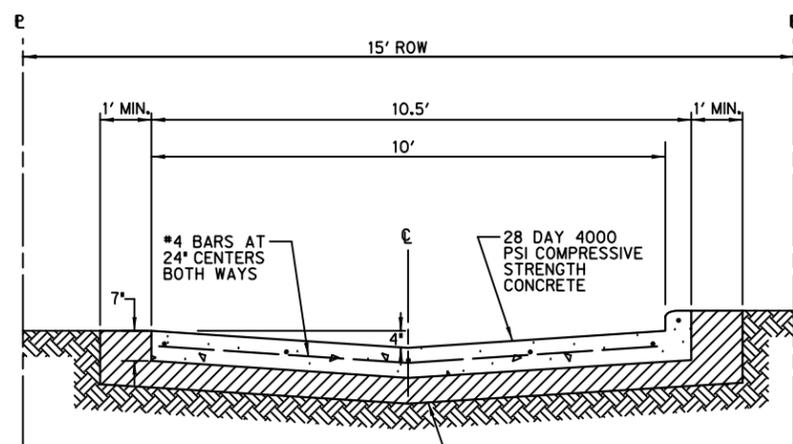
ALLEY INTERSECTION TYPE "B"



CURBED ALLEY SECTION
NOTE: SAME INVERT ON 12' WIDTH ALLEY PAVEMENT



ALLEY ENTRANCE PLAN



ALLEY PAVEMENT DETAIL WITH CURB



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:
THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

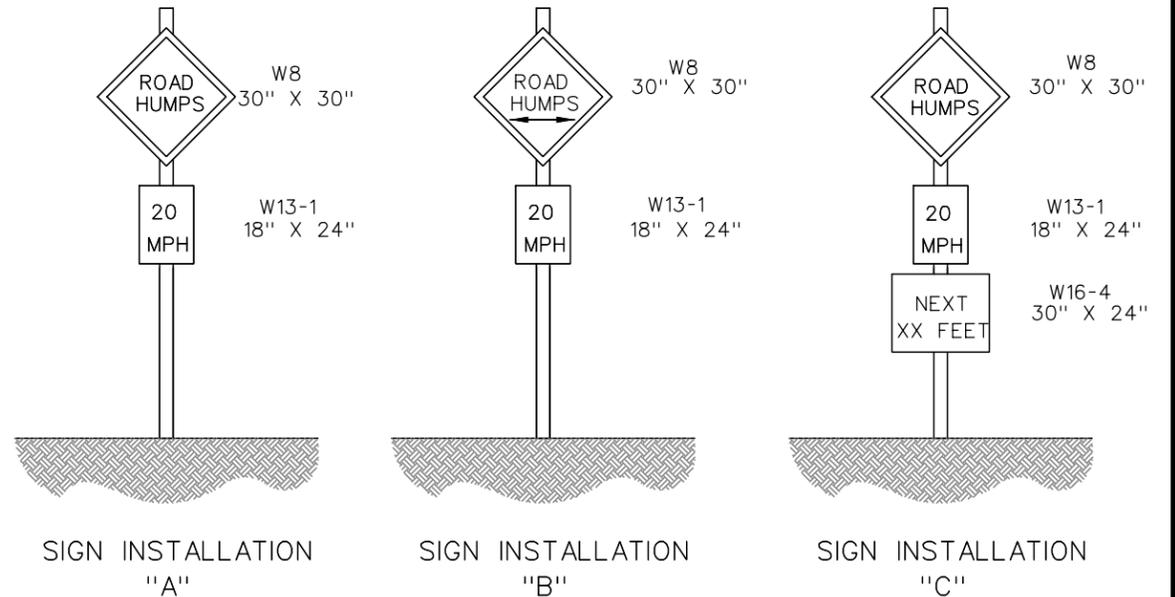
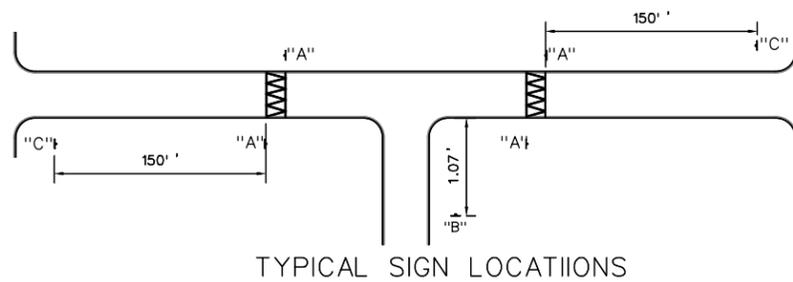
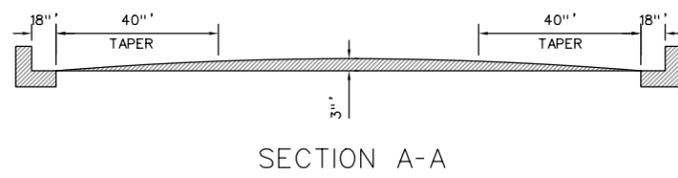
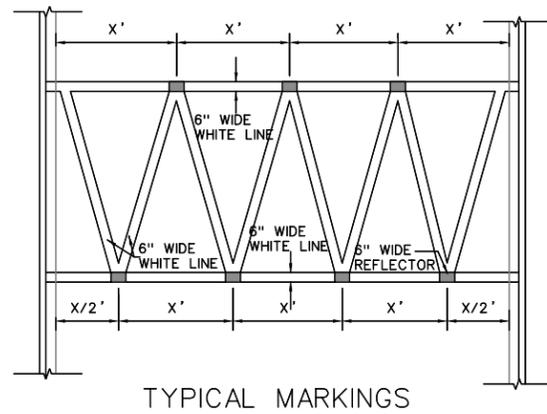
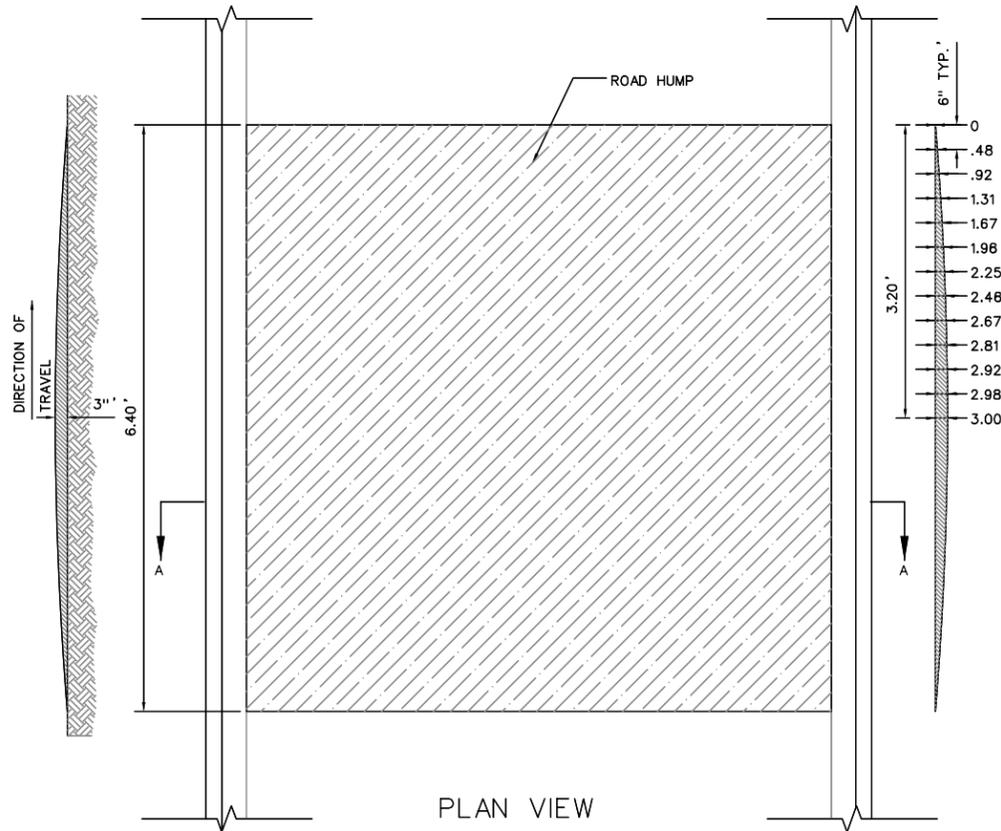
PAVEMENT STANDARD DETAILS						
ALLEY DETAILS						
 THE CITY OF THE COLONY TEXAS ENGINEERING DEPARTMENT						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	P-7	91

GENERAL CONDITIONS FOR LOCATING ROAD HUMPS

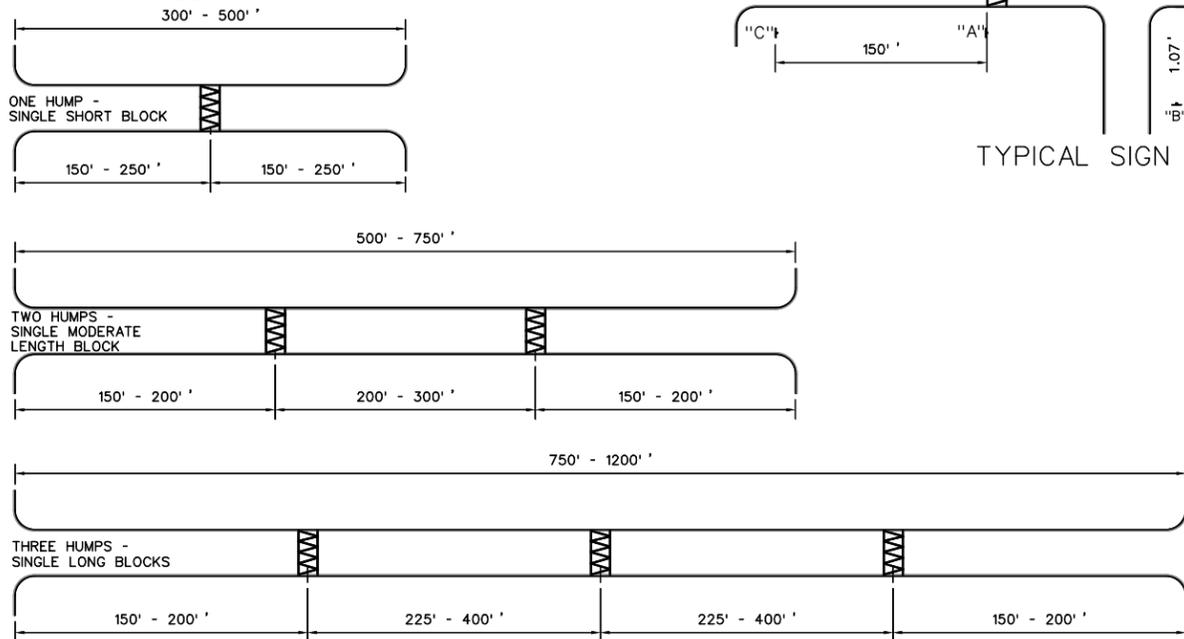
INSTALLATIONS MUST BE CONSIDERED ON A SYSTEM BASIS FOR OPTIMAL EFFECTIVENESS. ISOLATED HUMPS PROVIDE ONLY POINT SPEED REDUCTIONS AND DO NOT ACHIEVE AN OVERALL SPEED REDUCTION EFFECT.

SITE DETAILS SHOULD BE THE DOMINANT CONSIDERATION IN DETERMINATION THE ACTUAL LOCATION FOR EACH ROAD HUMP RATHER THAN AN EXACT SEPARATION DISTANCE. THE FOLLOWING ITEMS SHOULD BE TAKEN INTO CONSIDERATION WHEN LOCATING THE ROAD HUMPS.

- DO NOT LOCATE THE HUMPS OVER MANHOLES, GATE VALVES, UTILITY VAULT ACCESSES AND SIMILAR FEATURES.
- IF A DRAINAGE INLET IS NEAR WHERE A ROAD HUMP WOULD BE PLACED ACCORDING TO THE GENERAL SPACING CRITERIA, ATTEMPT TO LOCATE THE HUMP JUST DOWNSTREAM OF THE INLET.
- LOCATE HUMP TO TAKE ADVANTAGE OF EXISTING STREET LIGHTING.
- LOCATE HUMP TO PROVIDE ADEQUATE SIGHT DISTANCE TO MOTORIST. DO NOT LOCATE WITHIN HORIZONTAL CURVE.
- DO NOT PLACE HUMPS AT DRIVEWAYS.
- LOCATE HUMPS ON PROPERTY LINES, RATHER THAN RIGHT IN FRONT OF A RESIDENCE, IF POSSIBLE.
- DO NOT LOCATE A ROAD HUMP BETWEEN ENDS OF A LOOP DRIVEWAY THAT PRESENTS AN ATTRACTIVE RUNAROUND ROUTE.
- THE ROAD HUMP SHOULD BE PLACED PERPENDICULAR TO THE DIRECTION OF TRAVEL.
- DO NOT LOCATE A ROAD HUMP WITHIN 50 FEET OF AN INTERSECTION.
- IF THERE ARE NO CURBS, PROVIDE ALTERNATE MEANS TO DISCOURAGE RUNAROUNDS.



TYPICAL LOCATION WITHIN STREET

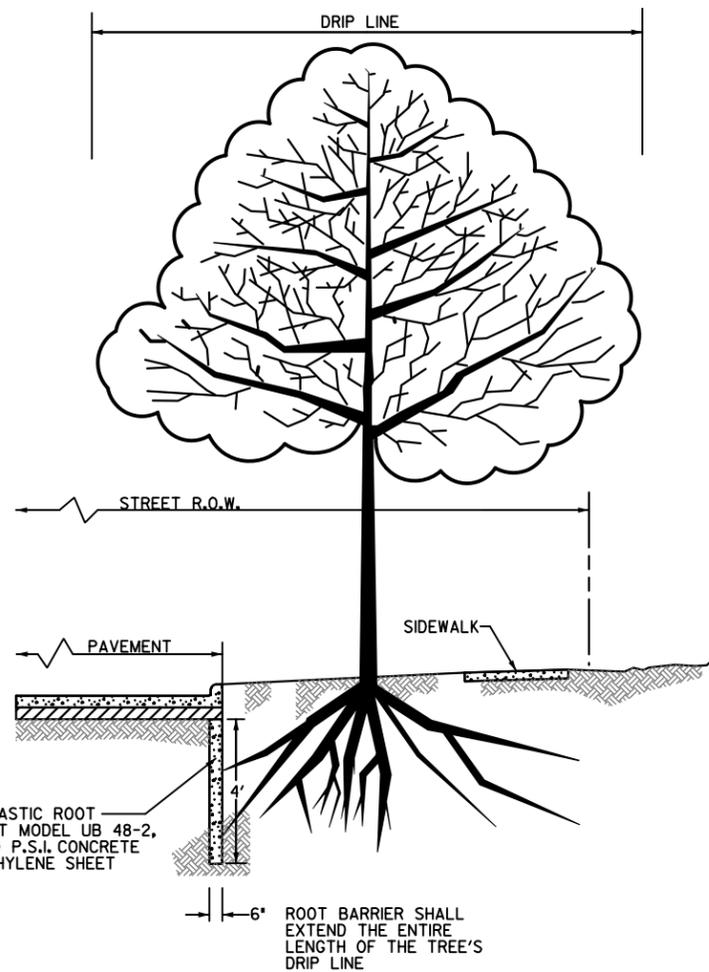


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STATE OF TEXAS
 LEIGH A. HOLLIS
 103573
 LICENSED PROFESSIONAL ENGINEER

NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

TYPICAL ROAD HUMP DESIGN						
SHEET 1 OF 1						
THE CITY OF THE COLONY TEXAS ENGINEERING DEPARTMENT						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	P-7	92



TREE ROOT BARRIER
NOT TO SCALE

NOTES:

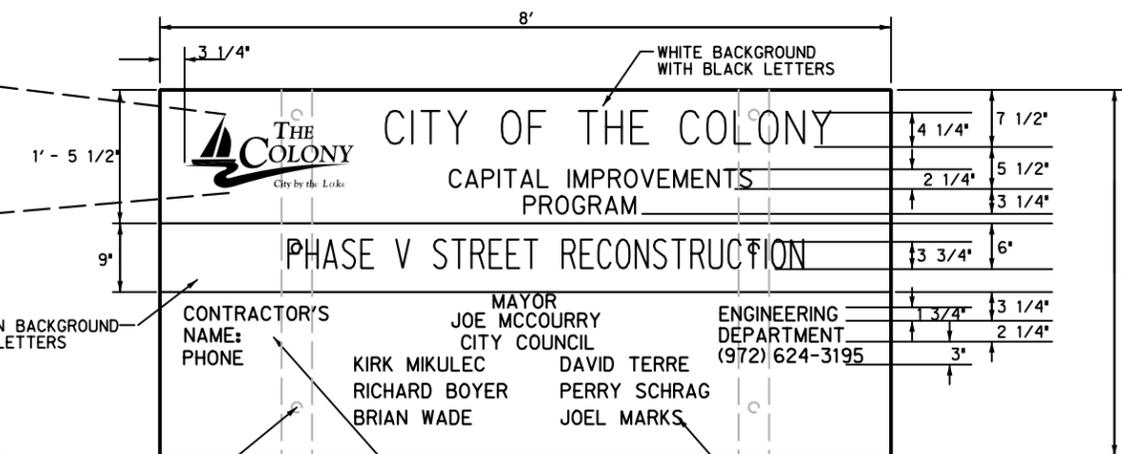
1. ROOT BARRIERS ARE REQUIRED FOR TREES WITHIN 10' OF PAVEMENT
2. LENGTHS OF ROOT BARRIERS SHALL BE APPROVED BY CITY INSPECTORS. FOR BIDDING PURPOSES A LENGTH OF 25 FEET WAS ASSUMED FOR EACH TREE. ACTUAL LENGTHS IN THE FIELD MAY VARY.



LOGO ENLARGEMENT

COLORS ARE STANDARD PMS SHADES AS NOTED BELOW:
 RED # 1955
 BLUE # 541
 GREEN # 576

KELLY GREEN BACKGROUND WITH WHITE LETTERS



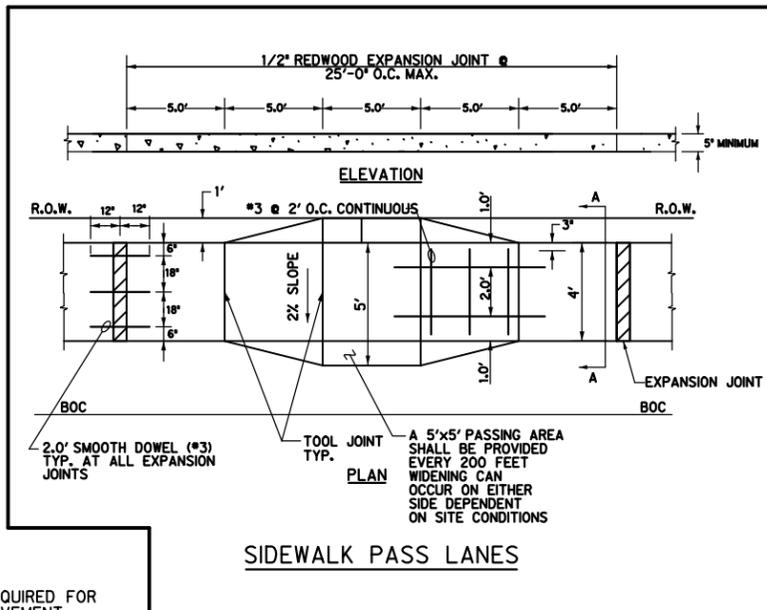
CONTRACTOR'S NAME: _____
PHONE: _____

MAYOR: JOE MCCOURRY
CITY COUNCIL: KIRK MIKULEC, DAVID TERRE, RICHARD BOYER, PERRY SCHRAG, BRIAN WADE, JOEL MARKS

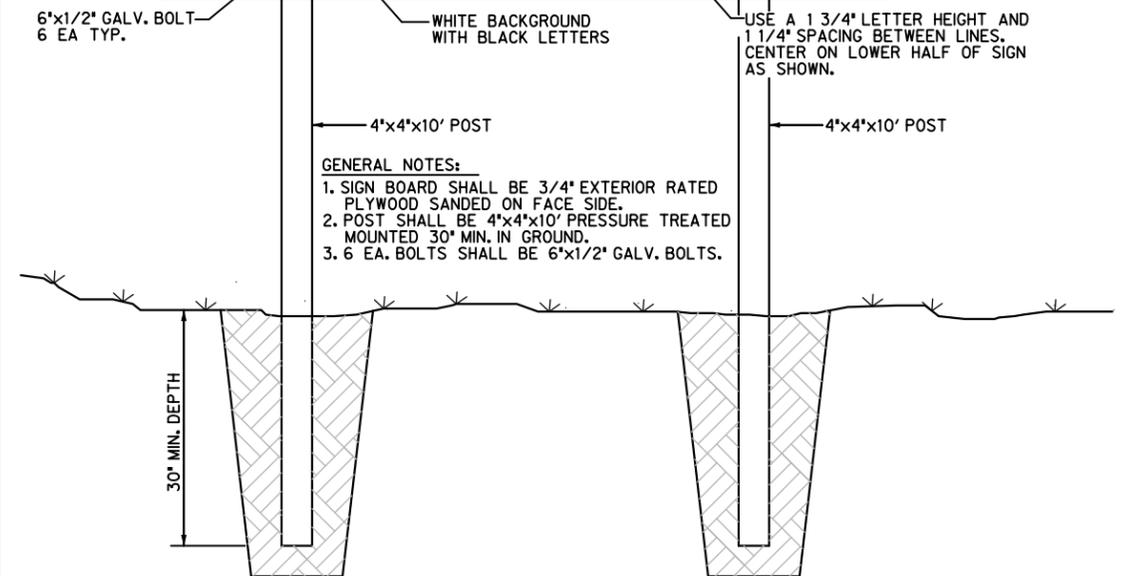
ENGINEERING DEPARTMENT: (972) 624-3195

GENERAL NOTES:

1. SIGN BOARD SHALL BE 3/4" EXTERIOR RATED PLYWOOD SANDED ON FACE SIDE.
2. POST SHALL BE 4"x4"x10' PRESSURE TREATED MOUNTED 30" MIN. IN GROUND.
3. 6 EA. BOLTS SHALL BE 6"x1/2" GALV. BOLTS.

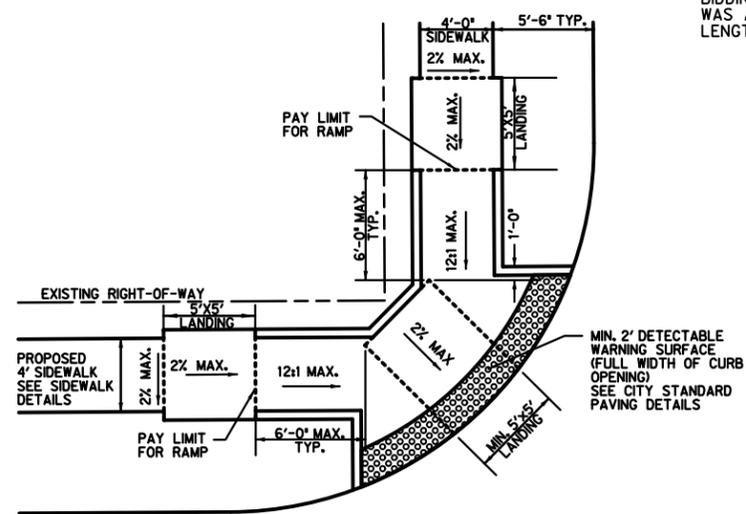


SIDEWALK PASS LANES

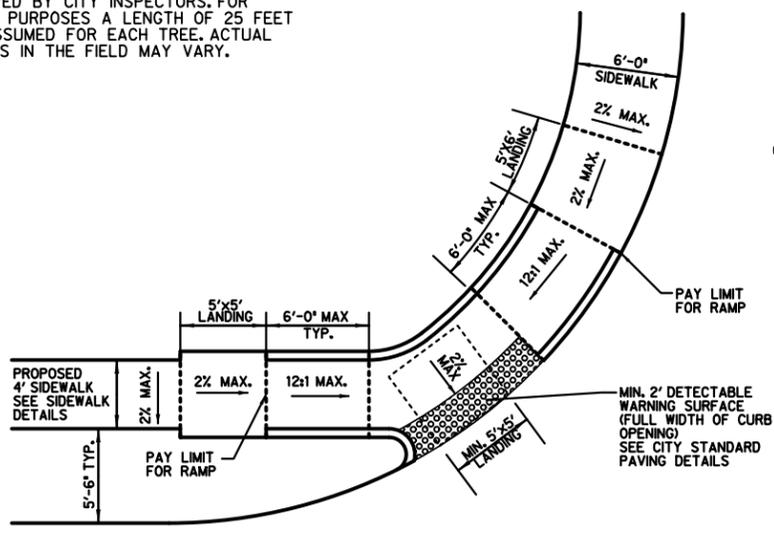


STANDARD CAPITAL IMPROVEMENT PROJECT SIGN DETAIL

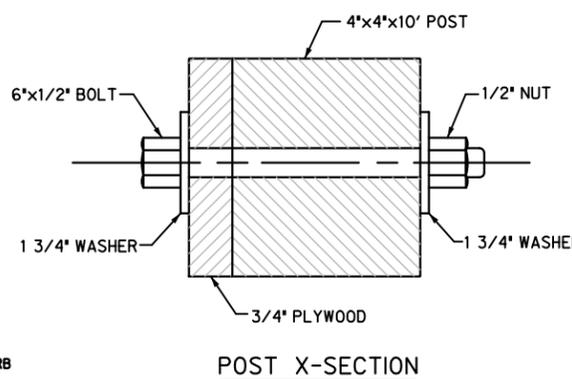
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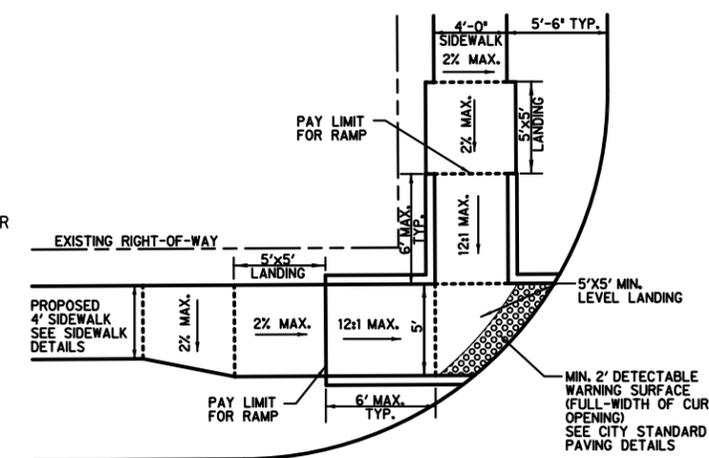
BARRIER FREE RAMP DETAIL (TYPE 12)
NOT TO SCALE



BARRIER FREE RAMP DETAIL (TYPE 13)
NOT TO SCALE



POST X-SECTION



BARRIER FREE RAMP DETAIL (TYPE 14)
NOT TO SCALE

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869DTMP01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

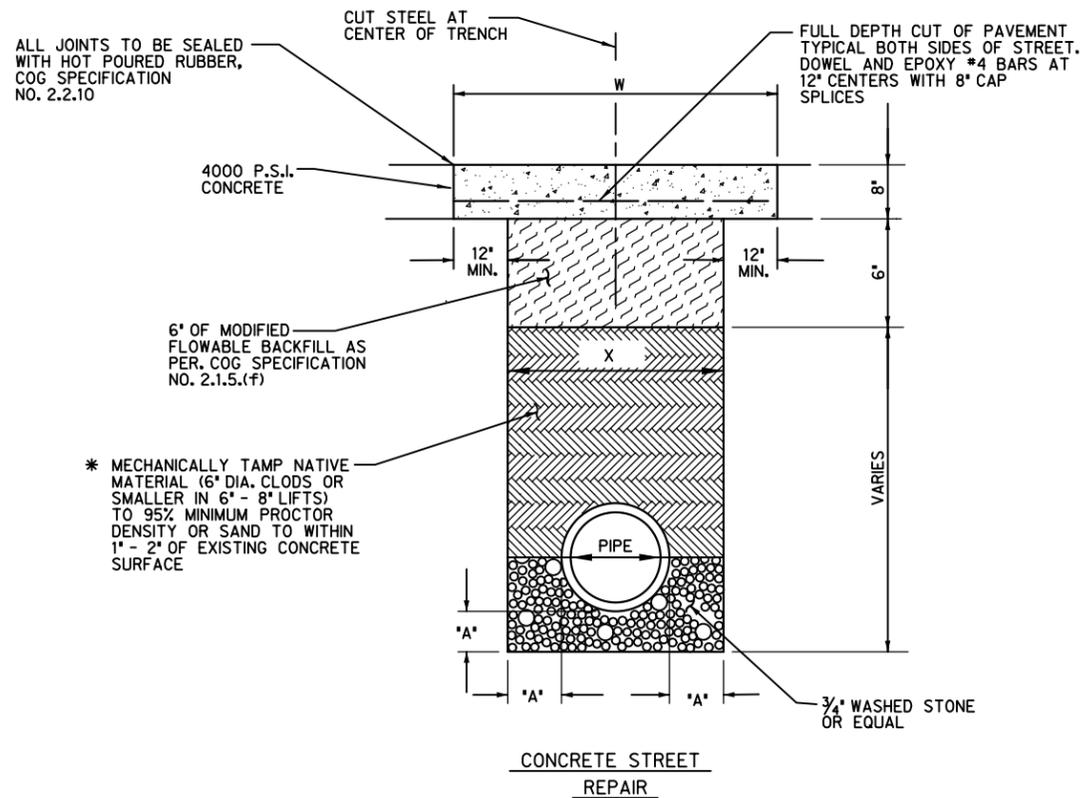


NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



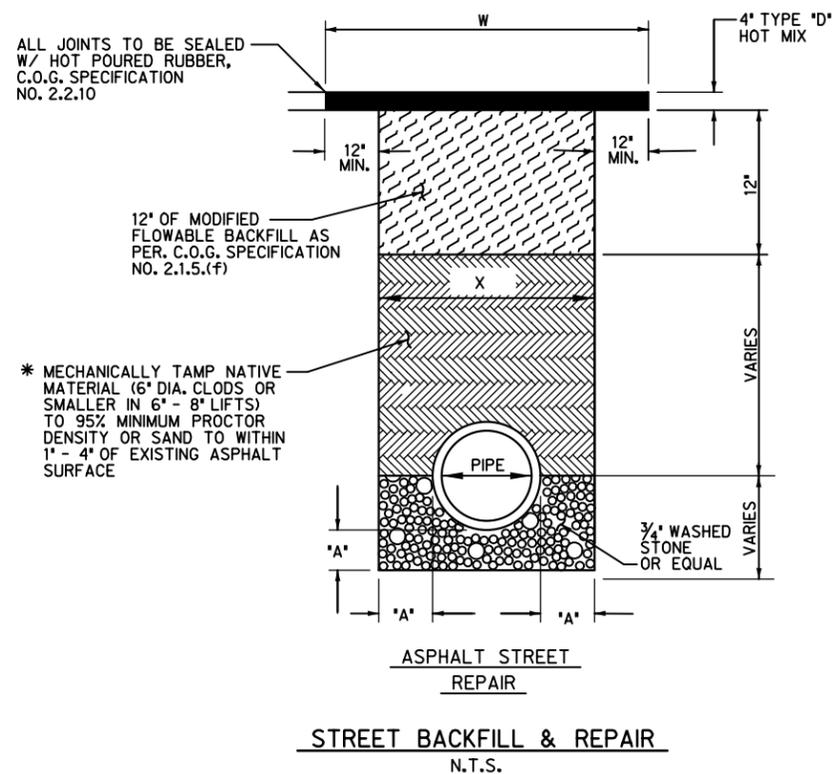
MISCELLANEOUS PAVEMENT DETAILS
 PHASE V STREET RECONSTRUCTION

SHEET
93
CITY BID No.
69-11-15-PHASE V

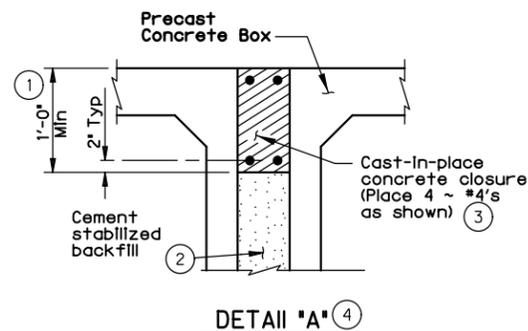
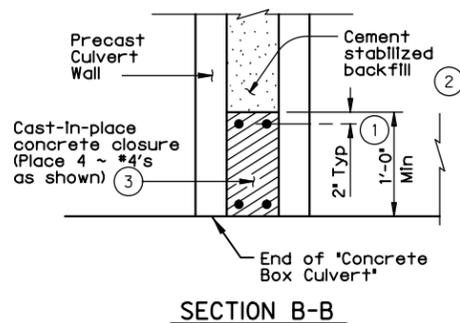
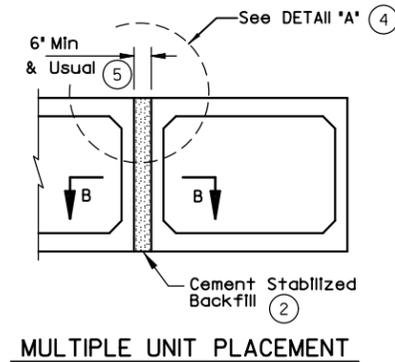


* MECHANICALLY TAMPED NATIVE MATERIAL MAY BE USED TO THE BOTTOM OF CONCRETE PAVEMENT WHEN BOTH OF THE FOLLOWING CONDITIONS ARE MET:

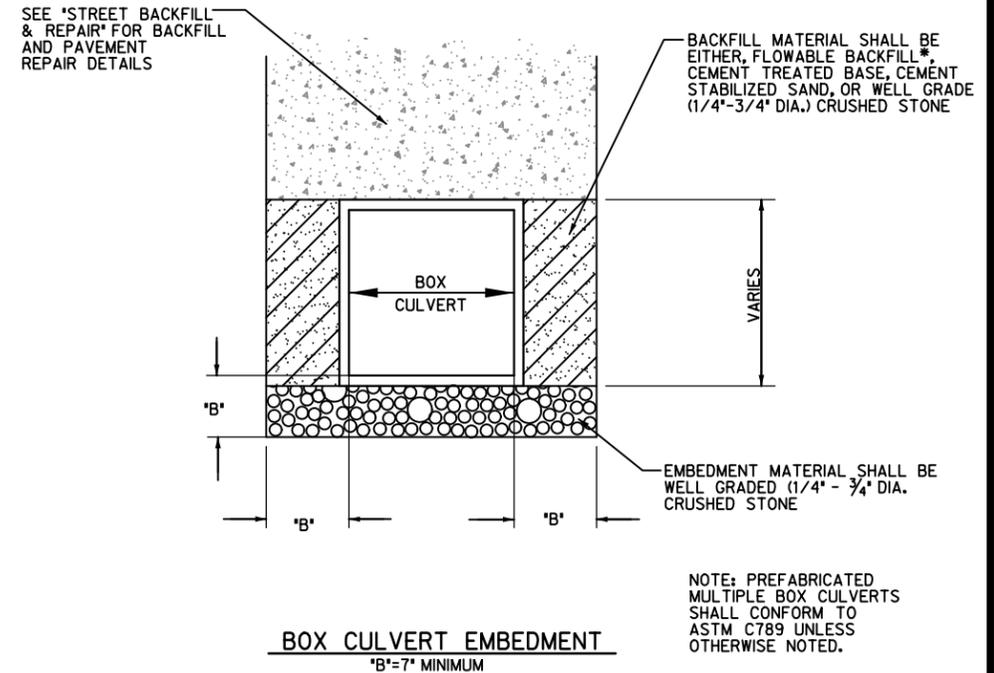
1. THE OUTSIDE OF THE STORM DRAIN MUST BE A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE PAVEMENT.
2. THE STREET IS BEING COMPLETELY REPLACED OR IT IS A NEW STREET.



NOTE: SAWCUT TO REPAIR ASPHALT OR CONCRETE PAVEMENT PRIOR TO OPENING THE DITCH IN ORDER TO ENSURE A NEAT STRAIGHT EDGE.



- 1 For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0". See Section B-B detail when interior walls are cast full length.
- 2 Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.
- 3 Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.
- 4 For multiple unit placement with the top slab as the final riding surface, provide wall closure as shown in DETAIL "A".
- 5 This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked. No payment will be made for any additional material in the gap between adjacent boxes.



* FLOWABLE BACKFILL IS ONLY REQUIRED FOR AREAS TO BE PAVED.

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES CLASS III R.C.P.	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH ("X")		WIDTH OF PVMT. REPLACEMENT * ("W") CONC. & ASPHALT **
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	
18	22.5	6	48	36	60
24	29.0	6	48	42	60
30	35.5	6	52	48	72
36	42.5	6	61	55	72
42	49.75	6	68	62	86
48	56.5	8	75	69	93
54	63.25	8	82	76	100
60	70.5	8	89	83	107
66	77.5	8	96	90	114
72	84.5	8	103	97	121
72+	VARIES	8	*	*	*

NOTE: * REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARIES BASED ON DEPTH, AND SOIL MATERIAL.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT



NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

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STORM DRAIN STANDARD DETAILS

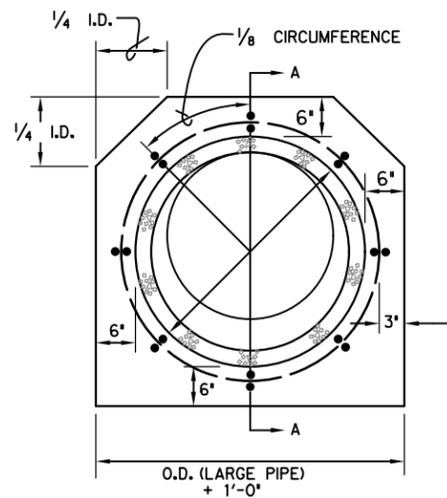
BACKFILL / EMBEDMENT



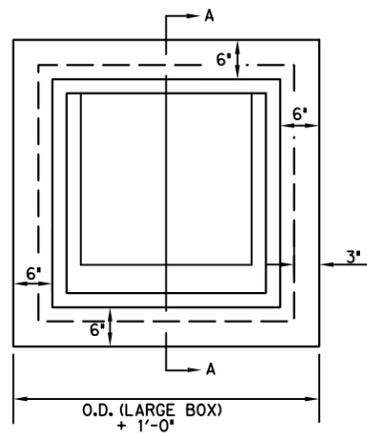
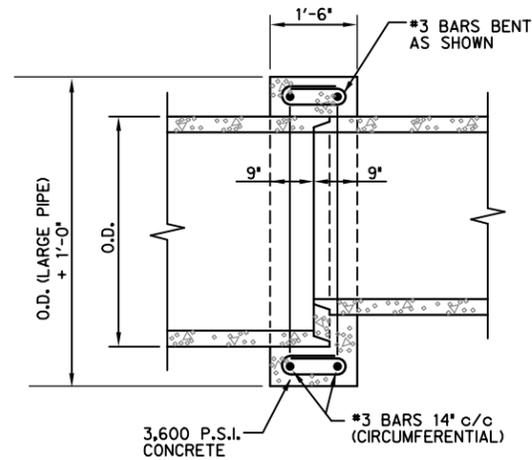
THE CITY OF THE COLONY TEXAS

ENGINEERING DEPARTMENT

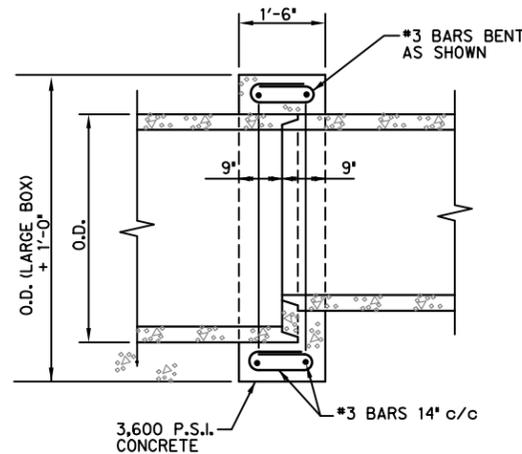
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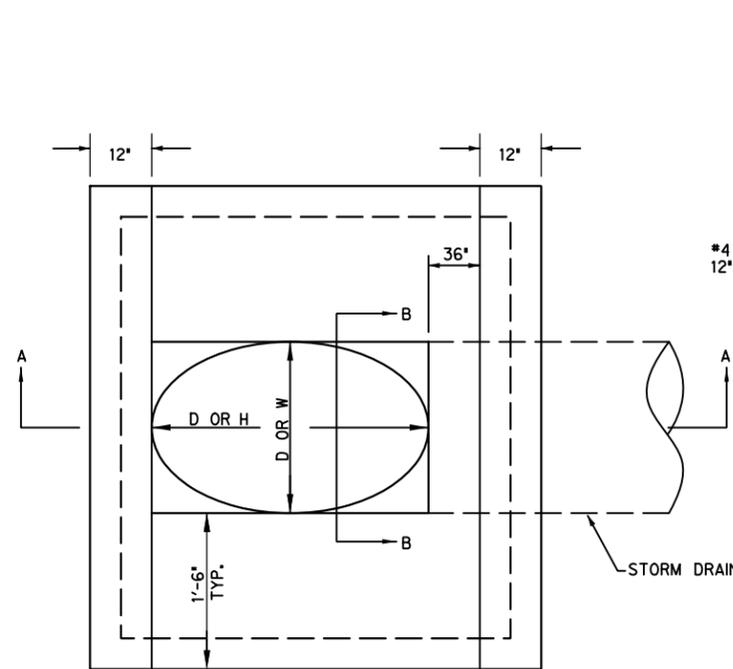
CONCRETE COLLAR DETAIL (PIPE)



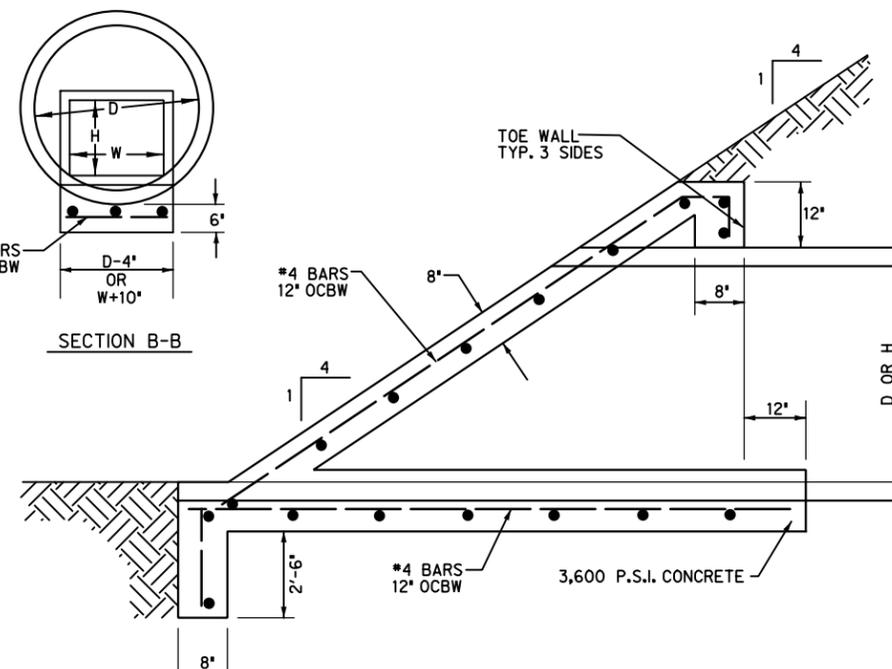
CONCRETE COLLAR DETAIL (BOX)



CONCRETE COLLAR
N.T.S.



PLAN



SLOPED HEADWALL
N.T.S.

STORM DRAIN GENERAL NOTES

GENERAL:

(A) All construction shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the 'Standard Specifications for Public Works Construction - North Central Texas' herein referred to as 'COG' specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.

CLOSED CONDUITS:

- (A) Closed conduits shall be installed per COG Item 508 specifications.
- (B) Only Reinforced Concrete Pipe (RCP) or Reinforced Concrete Box (RCB) is approved for use, unless approved otherwise by the City Engineer.
- (C) Class IV RCP shall be used where the pipe cover is greater than 1 foot and less than 3 feet. Class III RCP shall be used when the pipe cover is from 2 feet to 6 feet. The Class of all other RCP shall be determined by an Engineer per Loads and Supporting Strengths, American Concrete Pipe Association.
- (D) C-850 RCB shall be used where the cover is less than 3 feet. C-789 shall be used where the cover varies from 3 feet to 6 feet. The design of all other RCB shall be determined by an Engineer.
- (E) For pipes, embedment shall be per the Street Backfill & Repair detail on this sheet. For box culverts, embedment shall be per the Box Culvert Embedment detail on this sheet. Note that flowable backfill is only required below areas to be paved.
- (F) The contractor shall seal all joints on closed conduits with Omni-Flex Joint seals, or equal; unless approved otherwise by the City Engineer.
- (G) The minimum size for laterals is 18 inches in diameter. The minimum size for mains is 24 inches in diameter.

CONCRETE FOR PRE-CAST PRODUCTS:

(A) All concrete to be used in pre-cast products for reinforced concrete pipes or boxes shall come from plants certified by the National Pre-cast Concrete Association.

FITTINGS COLLARS AND CONNECTIONS:

- (A) The Contractor shall use only pre-fabricated fittings on new construction projects. Field connections shall be made only to existing pipe with City approval. The connection shall be a smooth connection and concrete wrapped on the outside and inside.
- (B) Concrete collars shall be constructed per the Concrete Collar Details on this sheet at all storm drain size and at grade changes or in curves where the joint is being pulled more than recommended by the manufacturer. Please also refer to the details on this sheet and COG Item 508.3.4.1 specifications.

INLETS:

- (A) All inlets shall be poured in place. Precast inlets, junction boxes, manholes, and headwalls are not allowed.
- (B) Inlets shall not be used as junction boxes or placed on a main, unless otherwise approved by the City Engineer.
- (C) The minimum opening for a curb inlet shall be 5 feet. Curb inlets shall be constructed in 5 foot increments. All curb inlets with 15 feet wide or larger openings shall have a center support. All curb inlets greater than 5 feet deep shall be designed and sealed by an Engineer.
- (D) Bottoms, tops, and variable height curb to be separate pours (3 pours) for curb inlets.
- (E) Curb inlet bottoms shall be poured prior to any paving.
- (F) Curb inlets shall have 10 linear feet of variable height curb on both sides of the inlet opening.
- (G) Ring and cover on curb inlets to be located directly over the outlet pipe.
- (H) Openings for Type Y and Special Type Y inlets shall vary from 3 feet to 5 feet. All Type Y and Special Type Y inlets greater than 6 feet deep shall be designed and sealed by an Engineer.

CONCRETE:

- (A) Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.
- (B) All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed for ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15 inch lap splices, unless noted otherwise on the plans.
- (C) The Contractor shall use a liquid membrane-forming curing compound per COG Item 303.2.13.1.1.
- (D) All exposed surfaces shall have 3/4-inch chamfer.

TESTING:

- (A) All closed conduits shall be Television Inspected per City of The Colony specifications.



NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:

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STORM DRAIN STANDARD DETAILS

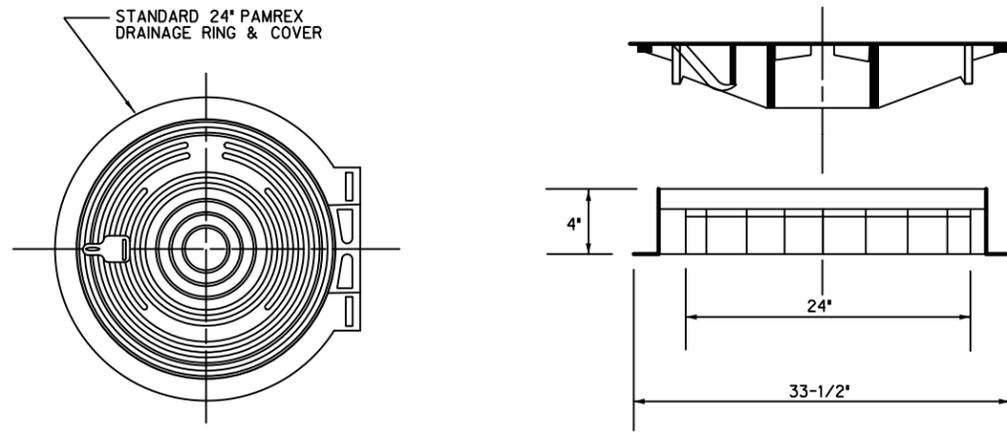
HEADWALLS, PIPE COLLARS & GENERAL NOTES



THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

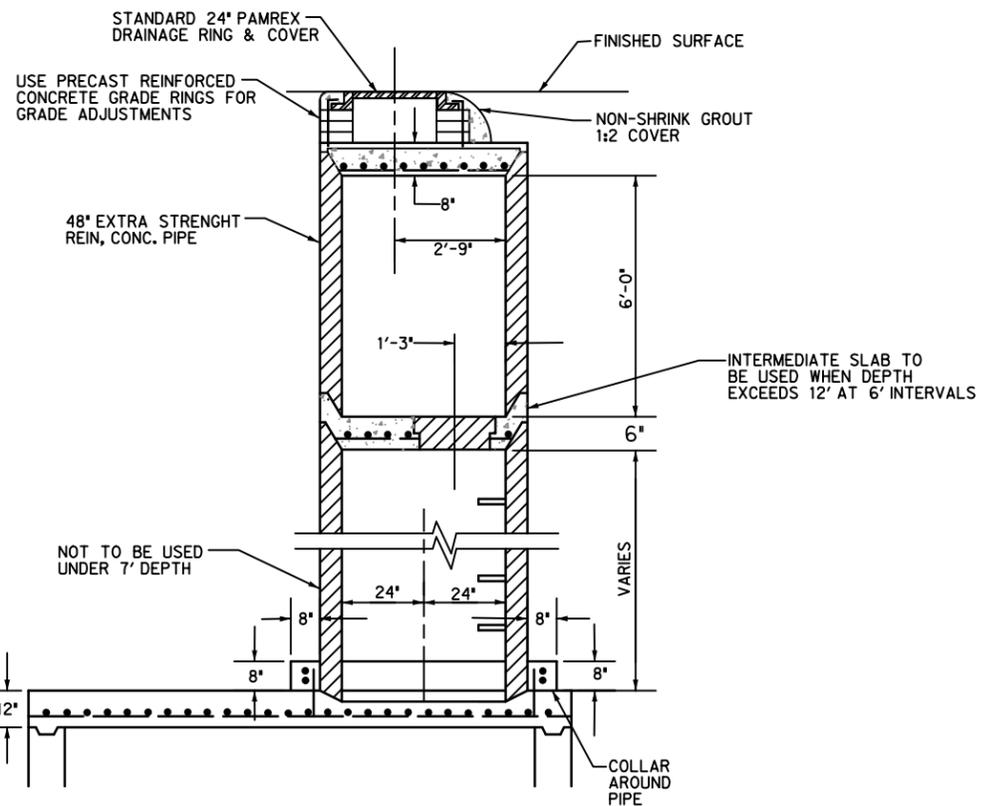
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INLET RING & COVER NOTES:
 1. THE STD. INLET COVER SHALL BE PAMREX 24\"/>

STANDARD 24\"/>

- GENERAL NOTES:**
- (A) All construction shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.
 - (B) All manholes shall be poured in place. Precast junction boxes or manholes are not allowed.
 - (C) Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.
 - (D) All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed per ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15 inch lap splices, unless noted otherwise on the plans.
 - (E) The Contractor shall use a liquid membrane-forming curing compound per COG Item 303.2.13.1.1 specifications.
 - (F) Light broom finish required on all exposed manhole tops.
 - (G) Manhole steps, frame and cover shall be installed as per the details on this sheet.
 - (H) Staked manhole extension shall be installed, where specified on the plans and as per the details on this sheet.
 - (I) Manholes shall be constructed per details on this sheet and COG Item 502.1.4 specifications.



STACKED JUNCTION BOX EXTENSION
 N.T.S.

NO.	PIPE SIZES	a	b	c	d	e	f
1	18"-24"	4'-5 1/2"	4'-5 1/2"	4'-2"	4'-2"	3'-6 3/8"	2'-5"
2	27"-33"	4'-11 5/8"	4'-11 5/8"	5'-1"	5'-1"	3'-6 3/8"	2'-8"
3	36"-42"	5'-5 5/8"	5'-5 5/8"	5'-11 1/4"	5'-11 1/4"	3'-6 3/8"	2'-11"
4	48"-54"	6'-1 3/4"	6'-1 3/4"	7'-1 1/4"	7'-1 1/4"	3'-6 1/2"	3'-3"
5	60"-66"	6'-9 7/8"	5'-9 7/8"	8'-3 1/4"	8'-3 1/4"	3'-6 1/2"	3'-7"
6	72"-78"	7'-6"	7'-6"	9'-5 1/4"	9'-5 1/4"	3'-6 1/2"	3'-11"
7	84"-96"	8'-6 1/8"	8'-6 1/8"	11'-2 1/4"	11'-2 1/4"	3'-6 1/2"	4'-5 1/2"



NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

CERTIFICATION:
 THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

STORM DRAIN STANDARD DETAILS

JUNCTION BOX
 (SHEET 2 OF 2)



THE CITY OF THE COLONY
 TEXAS
 ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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GENERAL

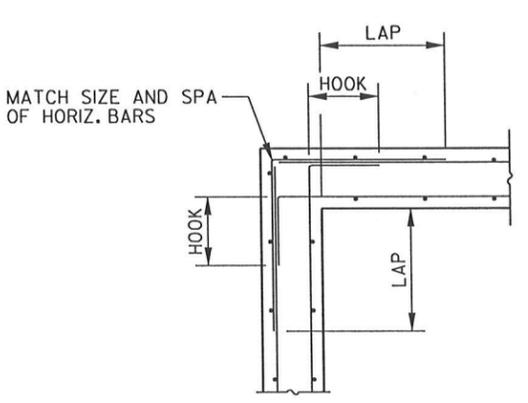
- ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THESE DRAWINGS AND THE SPECIFICATIONS.
- CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STORM WATER CONTROL, EROSION CONTROL, PUMPING AND DETERMINING NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT. THIS WORK SHALL BE CONSIDERED INCIDENTAL, AND NOT A SEPARATE PAY ITEM.
- CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL NOTIFY OWNER OF ANY POTENTIAL CONFLICT IN A TIMELY MANNER. EXCAVATED AREAS SHALL BE BACKFILLED AS DESCRIBED IN THE GEOTECHNICAL REPORT.
- ANY STRUCTURAL EXCAVATION AND BACKFILL SHALL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
- MEASUREMENT FOR PAYMENT FOR THE JUNCTION BOXES WILL BE LUMP SUM. THIS PRICE SHALL BE FULL COMPENSATION FOR ALL STRUCTURAL EXCAVATION, TEMPORARY SHORING, FORMWORK, CONCRETE, REINFORCING STEEL, COMPACTED BACKFILL, WATERSTOPS, OTHER ACCESSORIES, AND ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY FOR COMPLETE CONCRETE STRUCTURES.
- COMPLETE SHOP DRAWINGS FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION. A PERIOD OF AT LEAST 10 WORKING DAYS SHALL BE PROVIDED FOR THIS REVIEW. REVIEW OF SHOP DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK.
- ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE SHOWN ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
- THE CONTRACTOR SHALL REFER TO THE CIVIL DRAWINGS FOR ELEVATIONS NOT SHOWN AND FOR EXACT LOCATIONS AND DIMENSIONS. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL PLANS AND SECTIONS WITH THE CIVIL PLANS AND SECTIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMPLETION OF THE SHOP DRAWINGS.
- THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.
- THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
- THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SHORING OF ALL STRUCTURAL WORK AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH, IN HIS OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS IN THE STRUCTURE.
- ANY INCONSISTENCIES OR DISCREPANCIES THAT MAY OCCUR WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE GREATER QUANTITY OF ITEMS SHOWN, AND THE MOST COSTLY PRODUCT OR INSTALLATION METHOD SHALL BE PROVIDED, UNLESS INSTRUCTED OTHERWISE BY THE ARCHITECT/ENGINEER. IT SHALL BE DEEMED THAT THE CONTRACTOR BID AND INTEND TO EXECUTE THE MORE STRINGENT OR HIGHER QUALITY REQUIREMENT WITHOUT ANY INCREASE TO THE CONTRACT SUM OR CONTRACT TIME.

EARTHWORK AND FOUNDATIONS

- THE FOUNDATION DESIGN IS BASED ON AN EQUIVALENT LATERAL FLUID PRESSURE OF 100 PCF. THE GEOTECH'S REPRESENTATIVE SHALL CONFIRM THIS IS APPLICABLE FOR THE SOILS USED FOR BACKFILL. NOTIFY ENGINEER OF DISCREPANCY.
- A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE RETAINED TO OBSERVE ALL GRADING OPERATIONS AND THE REQUIRED TESTING FOR INSTALLATION OF THE JUNCTION BOXES. THESE TESTS AND OBSERVATIONS SHALL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:
 - IDENTIFICATION OF BEARING MATERIAL
 - VERIFICATION OF ADEQUATE PENETRATION OF THE FOUNDATION EXCAVATION INTO THE BEARING LAYER
 - VERIFICATION THAT THE BASE AND SIDES OF THE EXCAVATION ARE CLEAN OF LOOSE CUTTINGS
 - DETERMINATION OF WHETHER THE AMOUNT OF SEEPAGE ENCOUNTERED IS SUFFICIENT TO REQUIRE THE USE OF EXCAVATION DEWATERING METHODS.
- BACKFILL AROUND THE JUNCTION BOXES SHALL CONSIST OF SITE-EXCAVATED MATERIAL WITH ALL FRAGMENTS LARGER THAN FOUR INCHES IN MAXIMUM DIMENSION REMOVED AND SHALL BE FREE OF ALL ORGANIC AND DELETERIOUS MATERIAL. FILL SHALL BE PLACED IN COMPACTED LIFTS NOT EXCEEDING 8 INCHES THICK AND SHALL BE UNIFORMLY COMPACTED TO A MINIMUM OF 95 PERCENT OF ASTM D 698 STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT TWO POINTS BELOW TO TWO POINTS ABOVE THE SOIL'S OPTIMUM MOISTURE CONTENT.
- THE PREPARATION OF AREAS TO RECEIVE THE BOTTOM SLAB SHALL INCLUDE:
 - STRIPPING OF VEGETATION, ROOTS, OLD CONSTRUCTION DEBRIS, AND OTHER ORGANIC MATERIAL.
 - PROOFROLLING ANY EXPOSED SUBGRADE IN THE PRESENCE OF THE GEOTECH'S REPRESENTATIVE.
 - OVEREXCAVATION OF ANY SOFT AREAS AND REPLACEMENT WITH SELECT FILL.
- IF POSSIBLE, ALL CONCRETE FOR FOUNDATIONS SHALL BE PLACED ON THE SAME DAY THE EXCAVATION IS MADE. EACH FOUNDATION EXCAVATION SHOULD BE CLEAN, DRY, AND FREE OF ANY LOOSE SOIL OR UNCOMPACTED FILL. ALL SATISFACTORY FOUNDATION EXCAVATIONS SHALL BE ADEQUATELY PROTECTED AGAINST DETRIMENTAL CHANGES IN CONDITIONS SUCH AS FREEZING, DISTURBANCE, DRYING OR SATURATION. THE EXPOSED FOUNDATION SOILS SHALL NOT BE ALLOWED TO BECOME EXCESSIVELY DRY OR WET BEFORE PLACEMENT OF CONCRETE. THE MOISTURE CONTENT AND CONDITION OF THE SOILS SHOULD BE MAINTAINED IN A DAMP, BUT NOT WET, CONDITION BOTH DURING AND AFTER CONSTRUCTION.
- CARE SHALL BE TAKEN DURING GRADING OPERATIONS TO AVOID DAMAGE TO FOOTINGS AND OTHER SUBSTRUCTURES.
- COMPACTION WITHIN FIVE FEET OF THE BOX WALLS SHALL BE ACHIEVED WITH HAND COMPACTION EQUIPMENT. THE CONTRACTOR SHALL RELEVEL ALL AREAS OF BACKFILL WHERE SETTLEMENT OCCURS. CARE SHALL BE TAKEN THAT THE BACKFILL IS NOT OVERCOMPACTED. THIS WORK SHALL BE CONSIDERED INCIDENTAL, AND NOT A SEPARATE PAY ITEM.
- BACKFILLING ALONG ALL SIDES OF THE STRUCTURES SHALL PROCEED SIMULTANEOUSLY TO PREVENT UNBALANCED LATERAL PRESSURES DURING CONSTRUCTION.

CAST-IN-PLACE REINFORCED CONCRETE

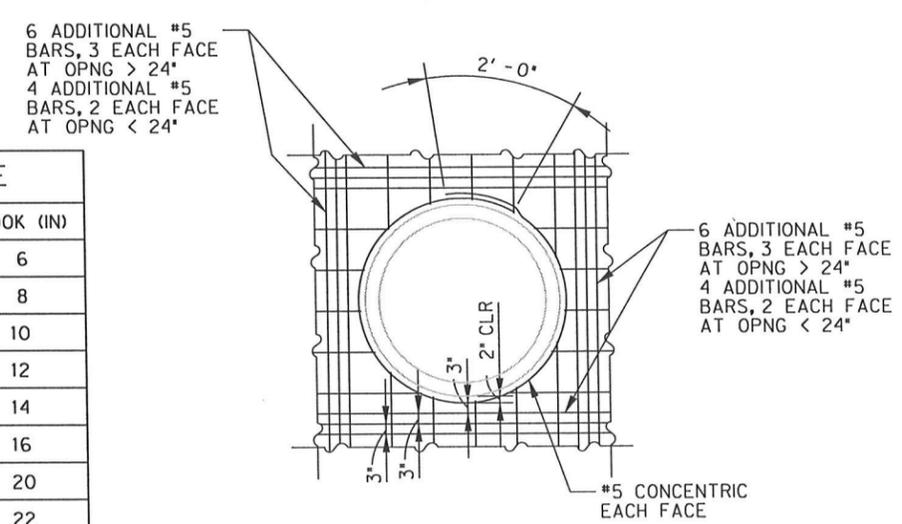
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- MILD STEEL REINFORCING BARS SHALL CONFORM TO ASTM A-615, NO. 3 BARS SHALL BE GRADE 40. LARGER BARS SHALL BE GRADE 60.
- MILD STEEL REINFORCEMENT AND ACCESSORIES SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI SP-66.
- PORTLAND CEMENT SHALL BE A SINGLE BRAND CONFORMING TO ASTM C-150, TYPE I, UNLESS OTHERWISE APPROVED.
- NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C-33. ALL CONCRETE SHALL USE NORMAL WEIGHT AGGREGATES, UNLESS NOTED OTHERWISE.
- ALL ADDITIVES FOR AIR ENTRAINMENT, WATER REDUCTION, AND SET CONTROL SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. THE USE OF CALCIUM CHLORIDE IS PROHIBITED.
- THE MAXIMUM NOMINAL SIZE OF COARSE AGGREGATE SHALL BE 1".
- CONCRETE SLUMPS SHALL BE AS FOLLOWS:
 - SLOPING SURFACES..... 3" MAX
 - CONCRETE CONTAINING SUPER PLASTICIZER 8" MAX
 - ALL OTHER CONCRETE..... 4" MAX
- MILD STEEL REINFORCEMENT SHALL BE PLACED AND SECURED IN ACCORDANCE WITH CRSI RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS.
- THE TESTING LABORATORY SHALL BE NOTIFIED AFTER THE MILD STEEL REINFORCEMENT AND EMBEDS ARE POSITIONED PRIOR TO EACH CONCRETE PLACEMENT. NO CONCRETE SHALL BE PLACED UNTIL THESE ITEMS ARE CHECKED AND APPROVED BY THE TESTING LABORATORY.
- CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE ON THE DRAWINGS).
 - a. TOP SLAB 1 1/2" FOR #5 AND SMALLER BARS
2" FOR #6 AND LARGER BARS
 - b. BASE SLAB 2" TOP
3" BOTTOM
 - c. WALLS 2" SIDES AND BOTTOM
- WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS AND PIPE WALL PENETRATIONS. ALL WATERSTOPS AT WALL AND SLAB JOINTS SHALL BE PVC TYPE 741 AS MANUFACTURED BY GREENSTREAK OR APPROVED EQUAL. ALL WATERSTOPS AT PIPE PENETRATIONS SHALL BE TYPE SF302 BY SYNKO-FLEX OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONCRETE SHALL CONFORM TO TxDOT CLASS S AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI, MINIMUM.
- IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, OR PIPES, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR.



NOTE: WALLS SHALL BE CAST MONOLITHICALLY.

TYPICAL 90 DEG. WALL CORNER DETAIL
SCALE: N.T.S.

SIZE	LAP (IN)	HOOK (IN)
#3	15	6
#4	19	8
#5	24	10
#6	29	12
#7	42	14
#8	48	16
#9	54	20
#10	60	22
#11	66	24



TYP PIPE PENETRATION DETAIL
SCALE: N.T.S.

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
SWE CHECKED	AVO: 30537
	FILE: 27869-SRCB-01.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 947-1422
FAX (817) 232-9784

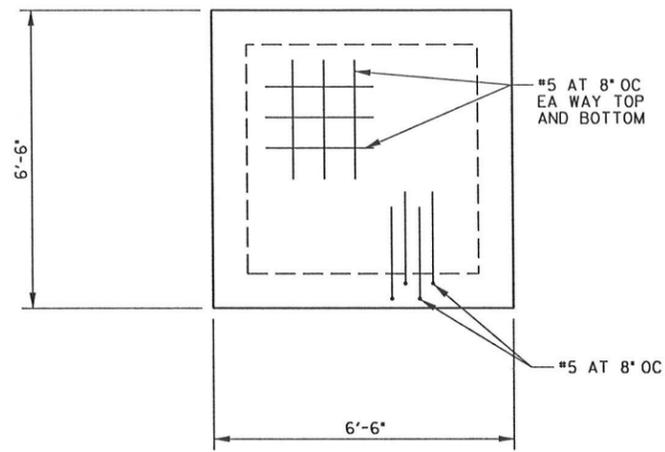


Shane W. Ebbert
NAME: Shane W. Ebbert
DATE: 2/17/15
TYPE FIRM #F-312

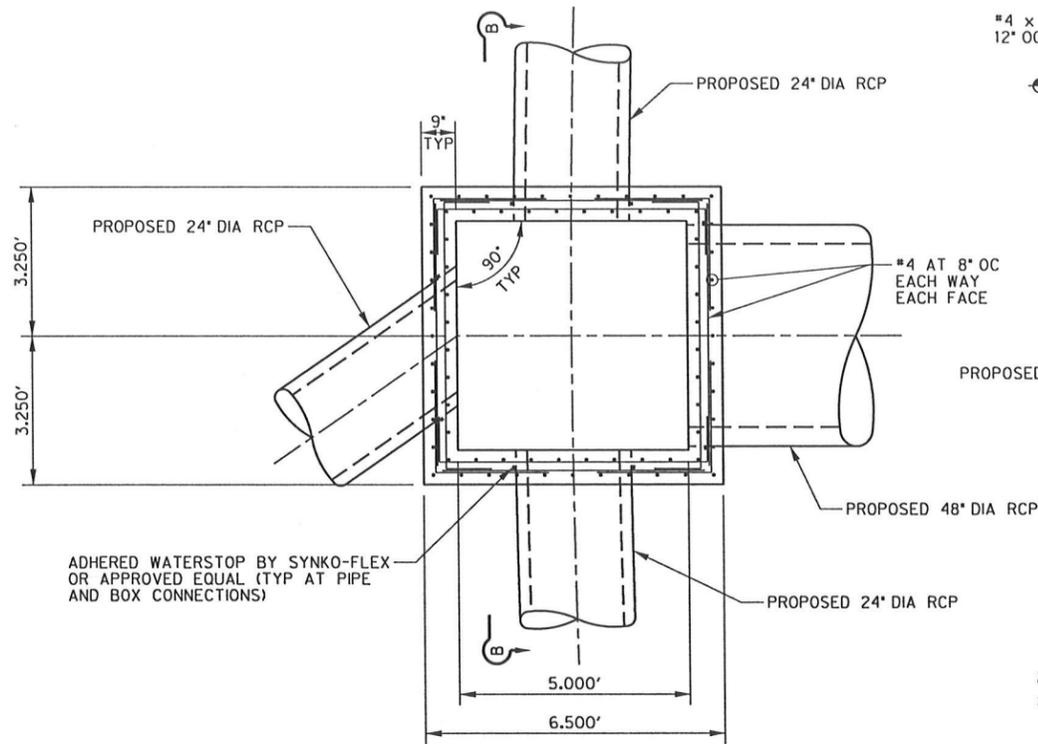


JUNCTION BOX GENERAL NOTES	SHEET 98
PHASE V STREET RECONSTRUCTION	CITY BID No. 69-11-15-PHASE V

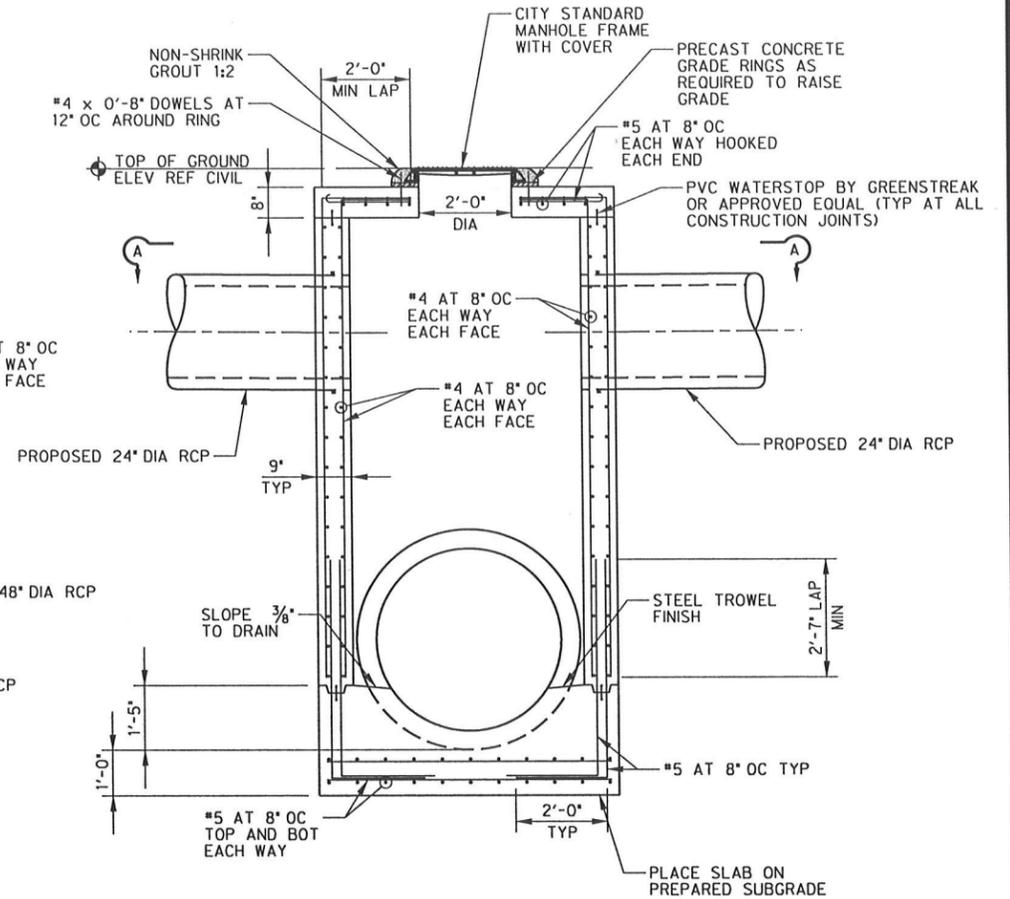
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BOTTOM SLAB PLAN
SCALE: 1/2" = 1'-0"

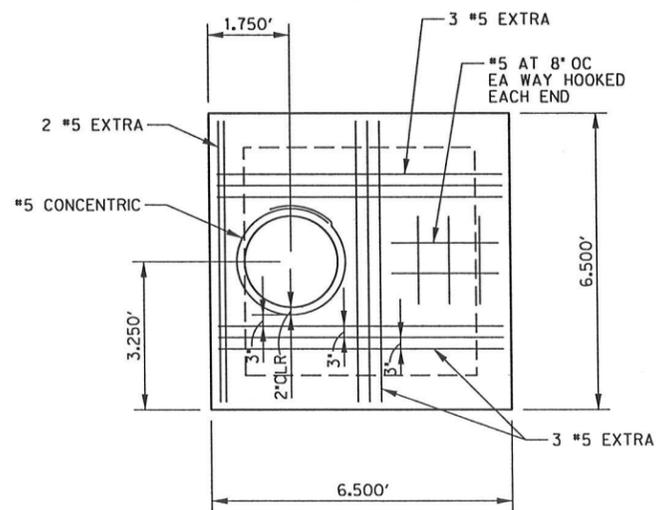


SECTION A-A
SCALE: 1/2" = 1'-0"



SECTION B-B
SCALE: 1/2" = 1'-0"

NOTE: REFER TO CIVIL DRAWINGS FOR ALL FLOW LINE ELEVATIONS.



TOP SLAB PLAN
SCALE: 1/2" = 1'-0"

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
SWE CHECKED	FILE: 27869-SRCB-02.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



Shane W. Ebbert
NAME: Shane W. Ebbert
DATE: 2/17/15
TBPE FIRM *F-312

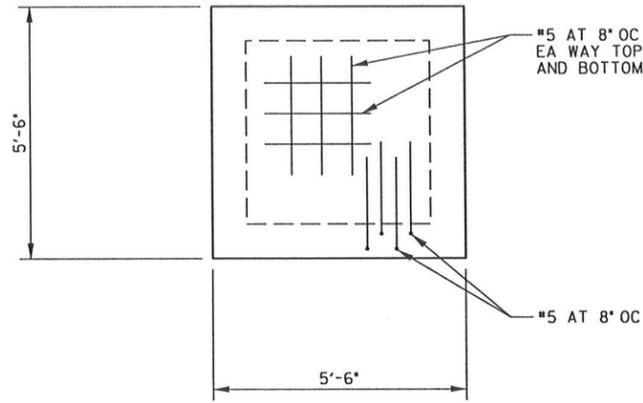


LINE "C" JUNCTION BOX DETAILS

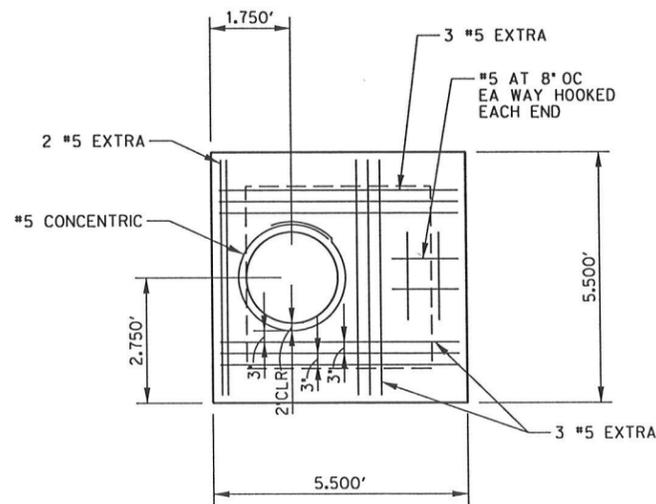
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SHEET
99
CITY BID No.
69-11-15-PHASE V

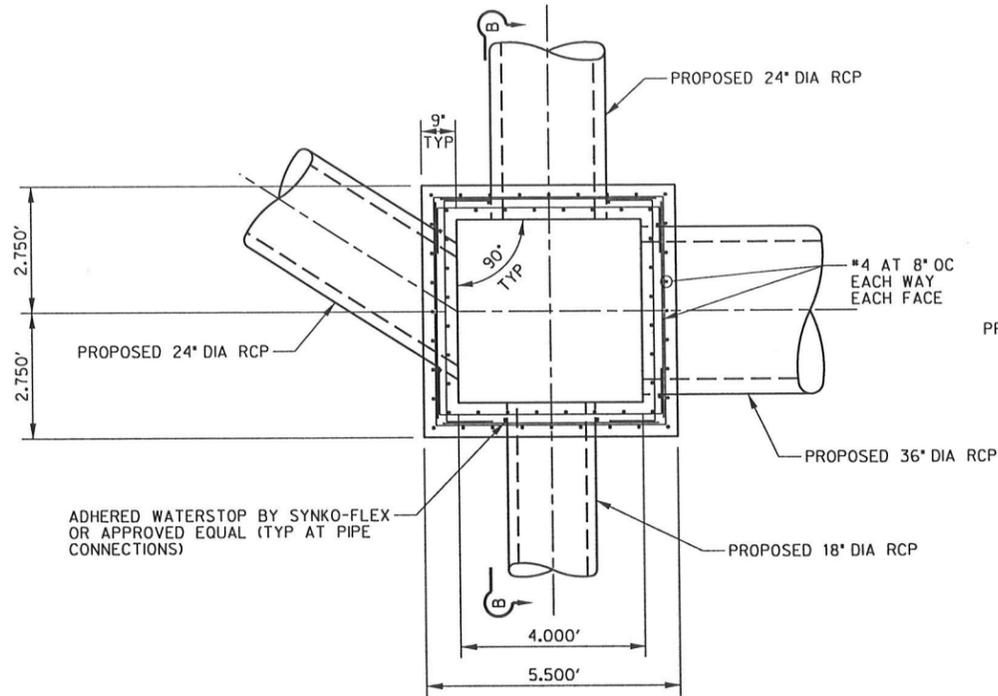
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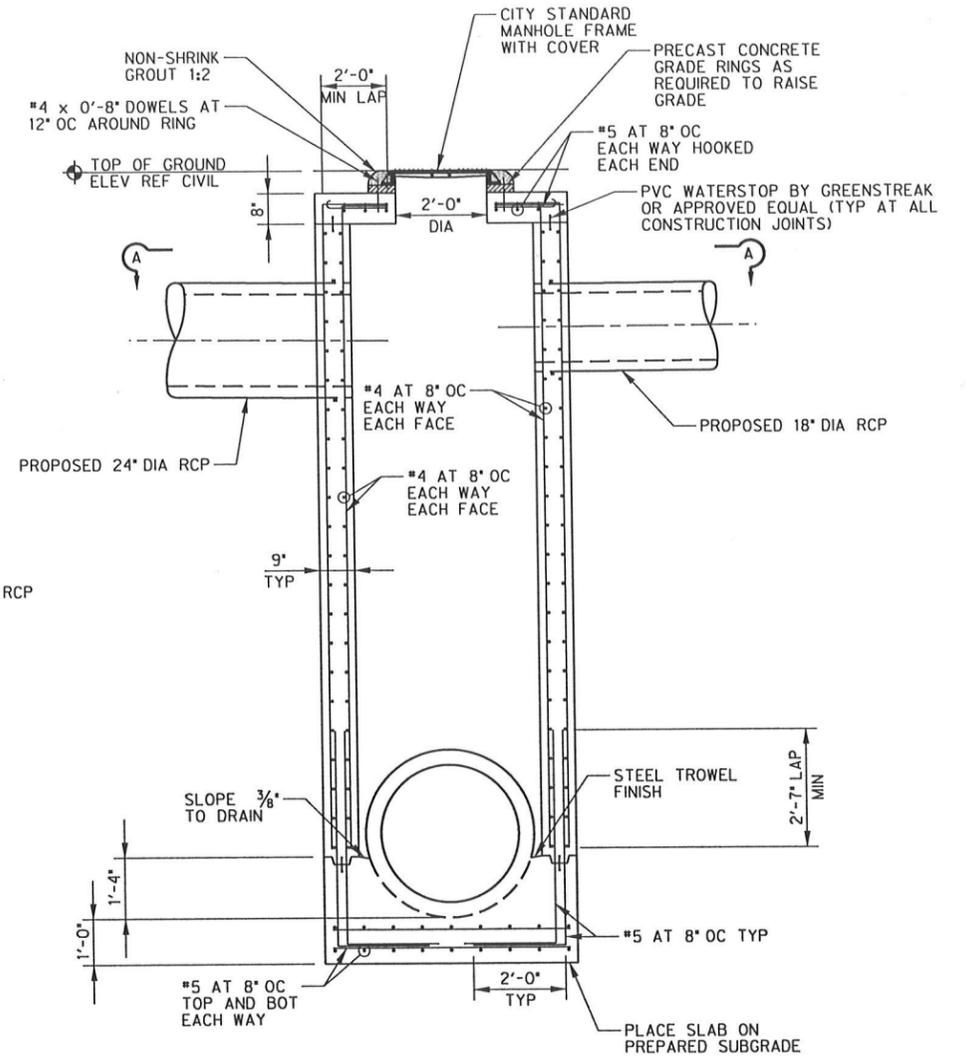
BOTTOM SLAB PLAN
SCALE: 1/2" = 1'-0"



TOP SLAB PLAN
SCALE: 1/2" = 1'-0"



SECTION A-A
SCALE: 1/2" = 1'-0"



SECTION B-B
SCALE: 1/2" = 1'-0"

NOTE: REFER TO CIVIL DRAWINGS FOR ALL FLOW LINE ELEVATIONS.

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	AVO: 30537
SWE CHECKED	FILE: 27869-SRCR-03.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 947-1422
FAX (817) 232-9784



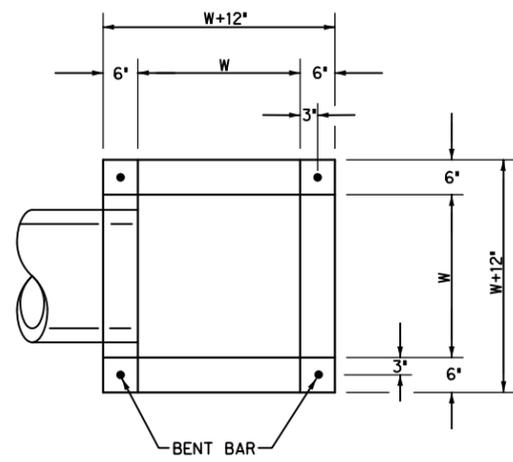
Shane W. Ebbert
NAME:
DATE: 2/17/15
TBPE FIRM #F-312

THE COLONY
City by the Lake

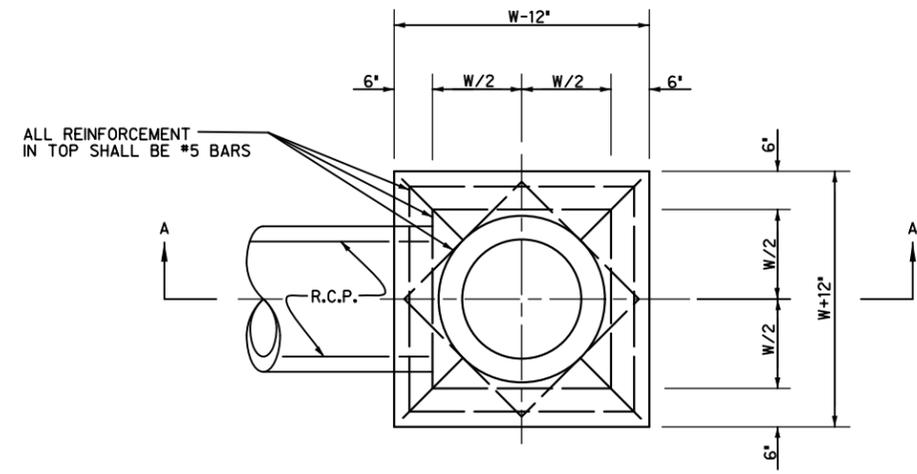
LINE "D" JUNCTION BOX DETAILS
PHASE V STREET RECONSTRUCTION

SHEET 100
CITY BID No. 69-11-15-PHASE V

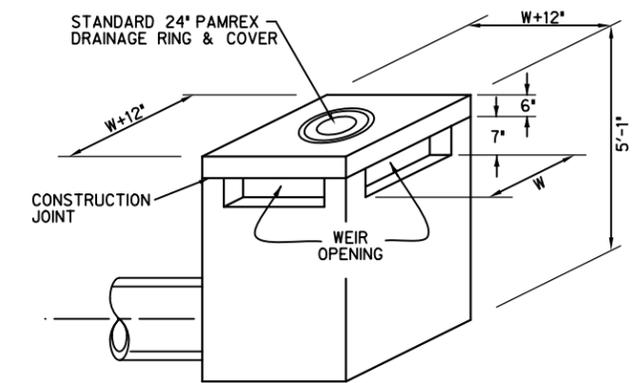
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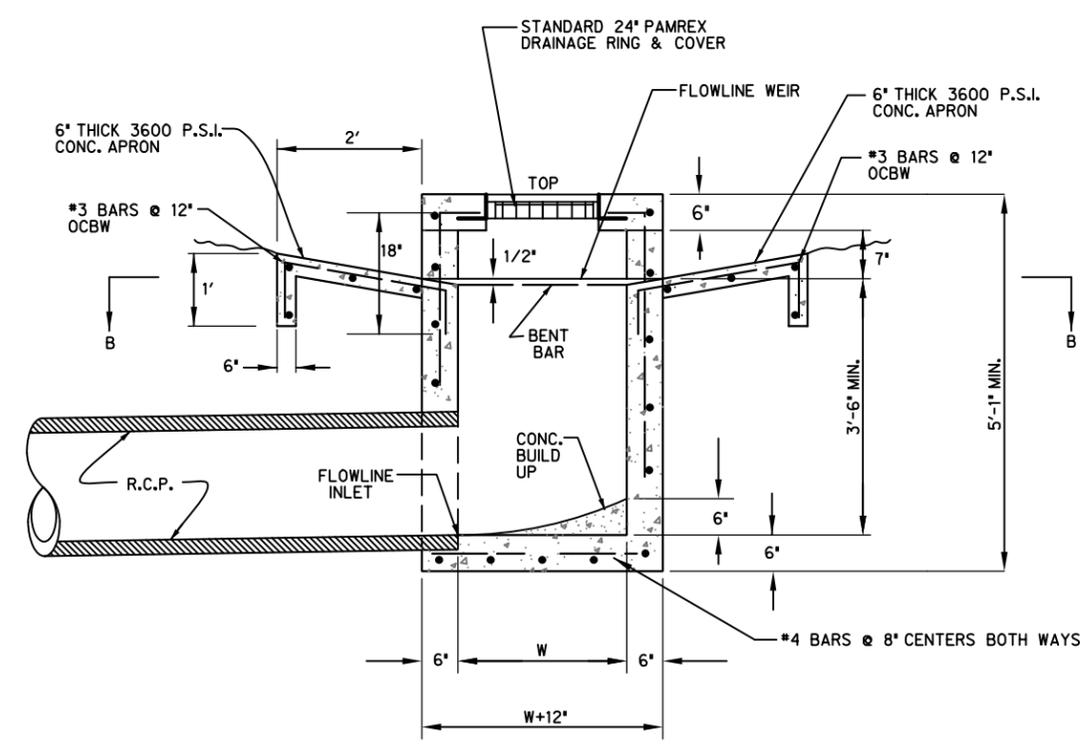
SECTION B-B



PLAN



ISOMETRIC DETAIL



SECTION A-A

TYPE Y AND SPECIAL TYPE Y INLET NOTES:

1. SPECIAL TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON TWO SIDES.
2. TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON FOUR SIDES.
3. THE MINIMUM OPENINGS FOR TYPE Y AND SPECIAL TYPE Y INLETS IS W=3 FEET
4. ALL REINFORCING SHALL BE WITH #4 BARS @ 12 INCH CENTERS, EXCEPT IN TOP.

TYPE Y & SPECIAL TYPE Y INLET

N.T.S.
NOTE: MINIMUM DIMENSION FOR "W" = 36 INCHES



NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

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STORM DRAIN STANDARD DETAILS

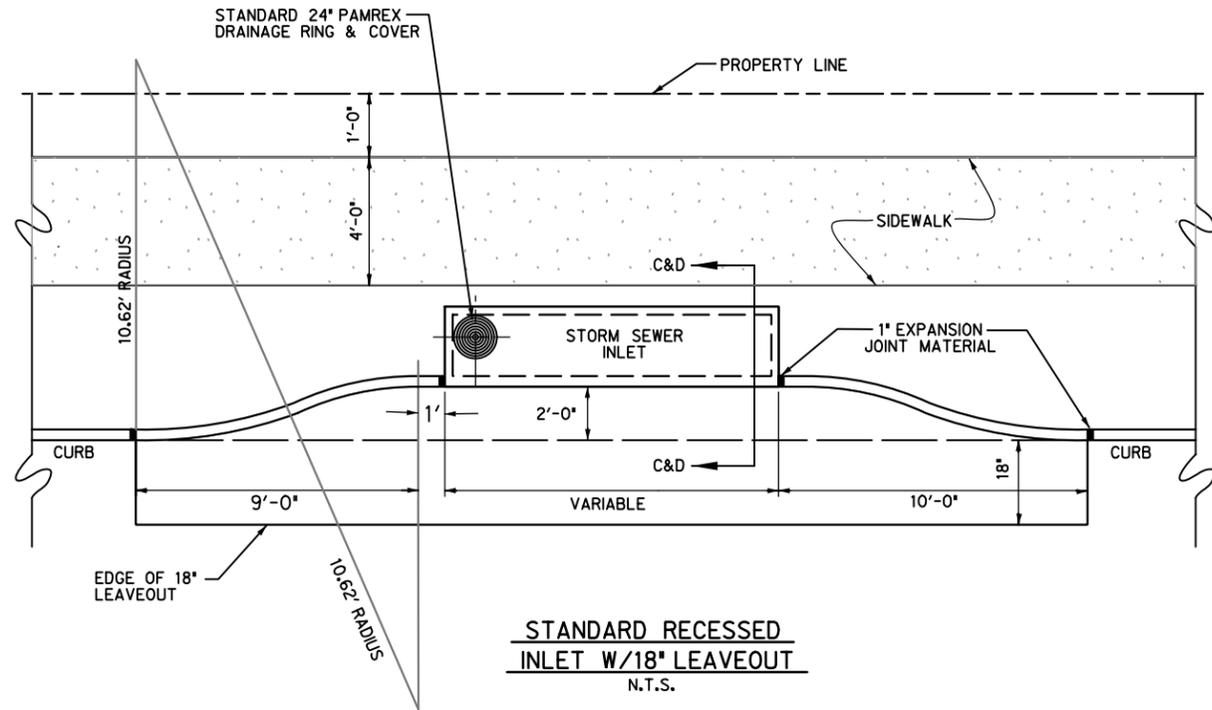
INLETS
(SHEET 1 OF 3)



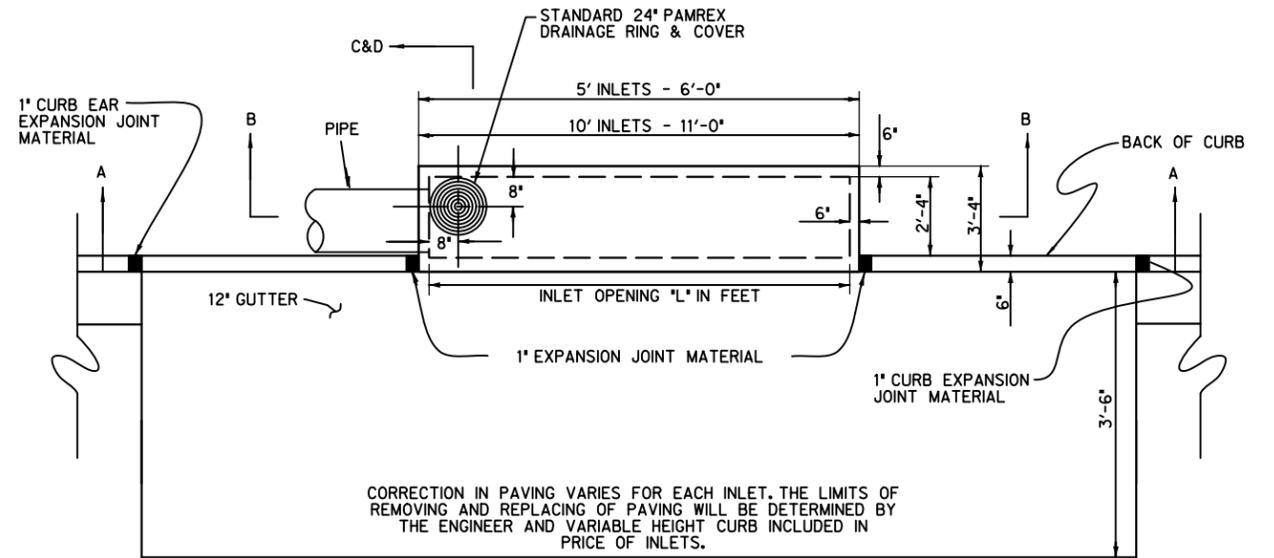
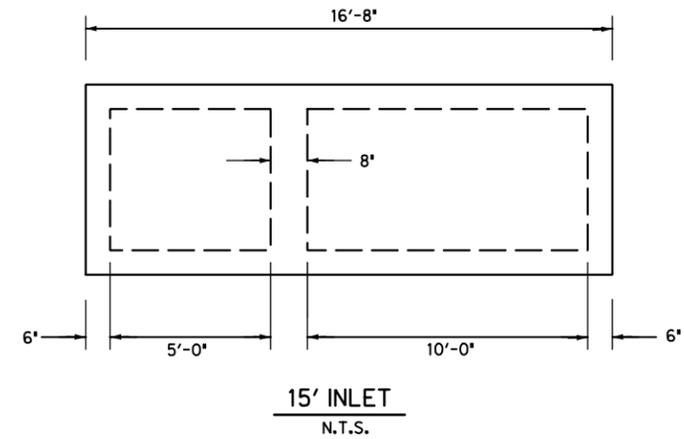
THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

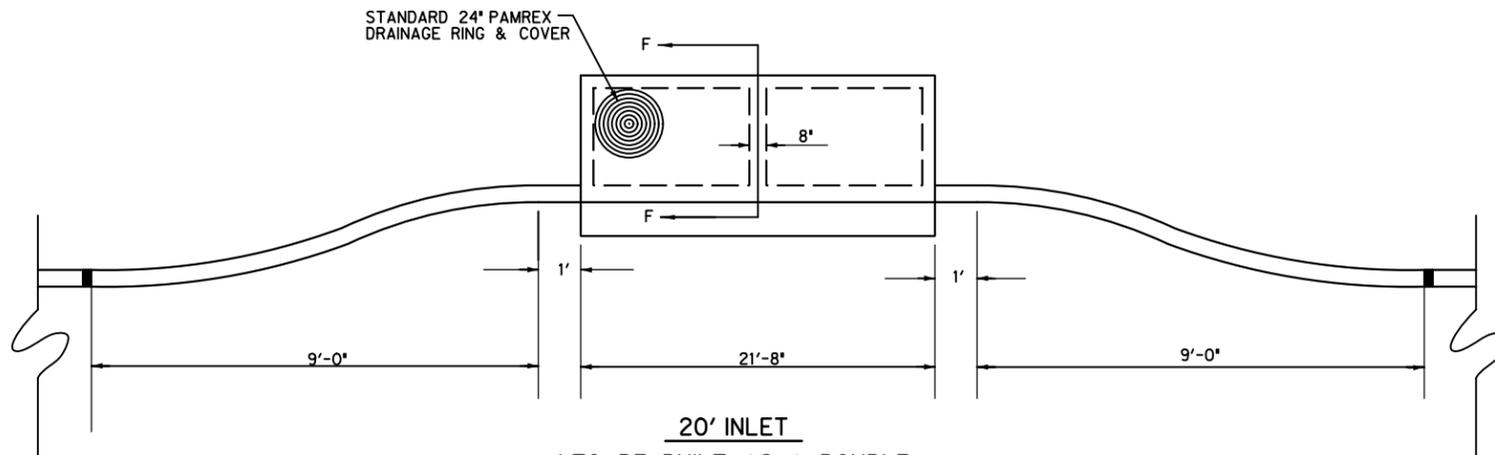
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**STANDARD RECESSED
INLET W/18" LEAVEOUT**
N.T.S.



**STANDARD CURB INLET
W/36" LEAVEOUT**
N.T.S.



**20' INLET
(TO BE BUILT AS A DOUBLE
10' INLET EXCEPT AS SHOWN)**
N.T.S.



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

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STORM DRAIN STANDARD DETAILS

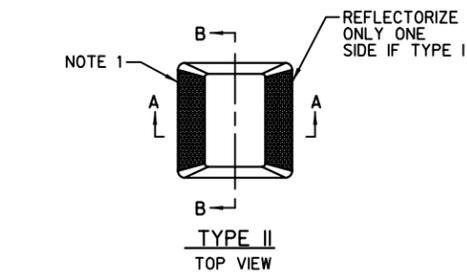
**INLETS
(SHEET 3 OF 3)**



**THE CITY OF THE COLONY
TEXAS**

ENGINEERING DEPARTMENT

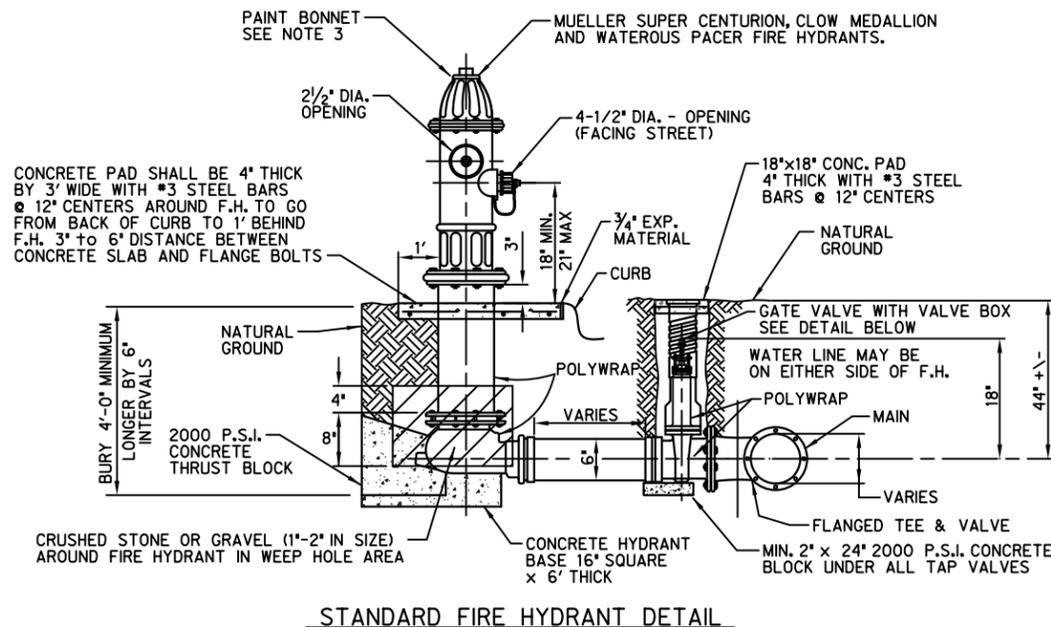
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PAVEMENT MARKERS (REFLECTORIZED)
TYPE II
N.T.S.

HYDRANT MARKER NOTES

- USE RAY-O-LITE PAT. 3 409 344 OR APPROVED EQUAL
- HYDRANT MARKERS SHOULD BE PLACED 4\"/>



STANDARD FIRE HYDRANT DETAIL
N.T.S.

FIRE HYDRANT NOTES:

- FIRE HYDRANTS SHALL BE LOCATED 3- FEET OFF THE FACE OF CURB IN RESIDENTIAL AREAS. REFER TO PLANS FOR LOCATIONS IN OTHER ZONING DISTRICTS.
- FIRE HYDRANTS SHALL BE COATED WITH KEM-LUSTRAL VERMILLION RED (F65R) OR AN EQUIVALENT COATING.
- ALL FIRE HYDRANTS SHALL BE PAINTED SILVER AFTER INSTALLATION. BONNET PAINT COLOR WILL DEPEND ON THE SIZE OF THE MAIN LINE.
6-INCH LINE - SILVER
8-INCH LINE - BLUE
12-INCH AND GREATER - YELLOW
- FIRE HYDRANT SHALL NOT BE PLACED IN SIDEWALK.
- ALL NUTS AND BOLTS FOR THE BONNET & FOOT OF FIRE HYDRANT SHALL BE STAINLESS STEEL.

GENERAL NOTES:

GENERAL:

- All construction shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the 'Standard Specifications For Public Works Construction - North Central Texas' herein referred to as 'COG' specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.
- Refer to COG division 500 specifications.

PIPE:

- Water mains up to 12-inches diameter shall be Polyvinyl Chloride PVC C-900 or C-909 DR18 (Class 150), or DR14 (Class 200). Water mains greater than 12-inches diameter may be one of the following:
 - Reinforced Concrete Cylinder Pipe (RCCP) C303 pressure class 150 or greater as specified by the Engineer. Refer to COG Item 501.4 specifications.
 - PVC pipe with minimum pressure class 165. PVC pipe shall not be used for mains greater than 24-inch diameter. Refer to COG Item 501.14 specifications.
- Embedment: Refer to COG Item 504 specifications.
 - For Pipe sizes 12-inches and smaller, the Embedment shall be as per the 'Pipe Embedment Detail' on the Backfill/ Embedment sheet.
 - For pipe sizes larger than 12-inches, the Engineer shall specify the Embedment.
- Cover: The following minimum cover over the waterline is required:
 - 48-inches of cover over waterlines 12-inches in diameter or less.
 - 60-inches to 72-inches of cover over waterlines larger than 12-inches in diameter.
 Note: Water mains buried with over 72-inches of cover shall be approved by the City Engineer.
- Storage: PVC water pipe is allowed to be stored a maximum of six (6) months without cover. Thereafter all pipe should be covered or kept away from sunlight and to be protected from other elements.
- Installation: Refer to COG Item 506 specifications.
 - Blue PVC water pipe is acceptable for the installation.
 - All water mains, valves, fittings, etc. made with Ductile Iron or ferrous metal shall be wrapped with 89 mil. Polywrap.
- Beveled ends of the pipe shall be removed when used in Mega Lug fittings.
- Casings: When PVC water pipe is installed in casing, skids must be used to prevent damage to the pipe and bell during installation. PVC pipe should not rest on the bells. Plastic spacers such as RACI or approved equal shall be used.

FITTINGS:

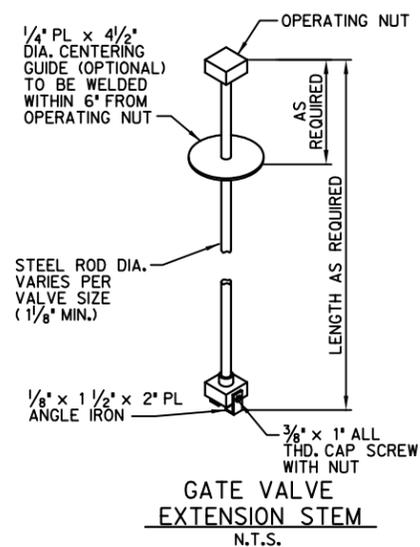
- The Contractor may use cast iron or ductile iron fittings, complete with Polywrap.
- All fittings shall be Mega Lug or equivalent unless specified otherwise.
- All fittings shall be blocked as per the details on the Concrete Blocking sheet.
- Refer to COG Item 501.7.4 specifications.

VALVES:

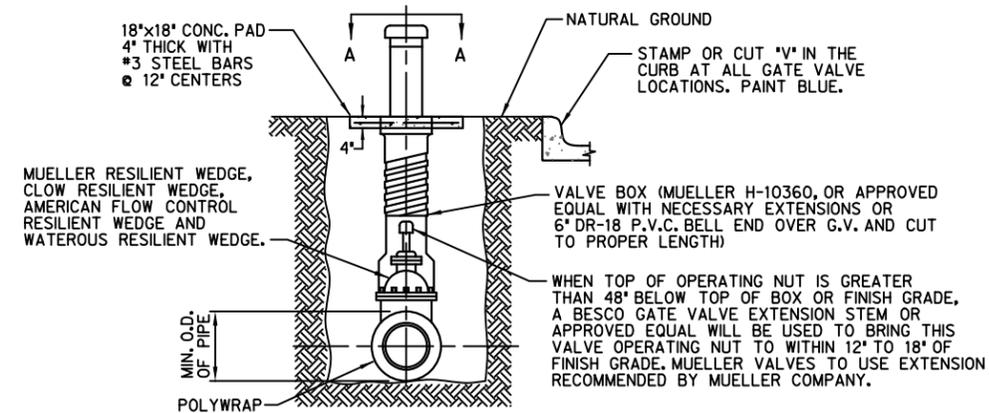
- Valves installed on waterlines 12-inches diameter or less shall be vertical gate valves.
- Valves installed on waterlines larger than 12-inches diameter shall be butterfly valves. An offset manhole shall be installed at the butterfly valve operator.
- All gate valves shall have non-rising stems and resilient sealed wedge.
- All valves and fire hydrants shall be in line with the lot lines, where possible.
- All valve locations shall be marked with 'V' stamped or cut on the curb and painted blue for water mains and silver for fire hydrants.
- Refer to the details on this sheet and COG Item 502.6 specifications.

TESTING:

- The following tests shall be performed:
- Purging by using the 'Polly-Pig' method for all water lines greater than 200 feet in length, and less than 12-inches in diameter, to enter and exit at approved strategic locations and as per COG Item 506.7.3.1 specifications, to include all equipment, material, fittings, and labor. Lines larger than 12-inches shall be purged by the flushing method as per COG 506.7.3.2.
 - Hydrostatic test as per COG Item 506.5 specifications.
 - Disinfection shall follow as per COG Item 506.7.5 specifications and as approved by the City Engineer.
 - All bleeders to have corporation stops at the main.
 - One water sample per each street name (no greater than 1,000 feet), or as approved by the City Engineer.



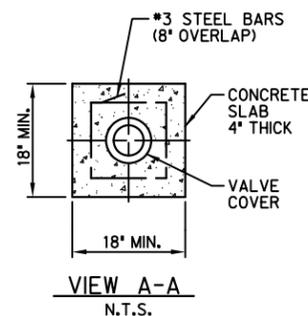
GATE VALVE EXTENSION STEM
N.T.S.



TYPICAL GATE VALVE SETTING AND BOX
N.T.S.

WATER VALVE NOTES:

- CONCRETE SLABS FOR WATER VALVES SHALL NOT BE PLACED IN PAVEMENT.
- FOR VALVE LOCATION IN PAVEMENT CONCRETE SHALL BE PLACED UP TO VALVE COVER.



VIEW A-A
N.T.S.



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:

THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

WATER STANDARD DETAILS

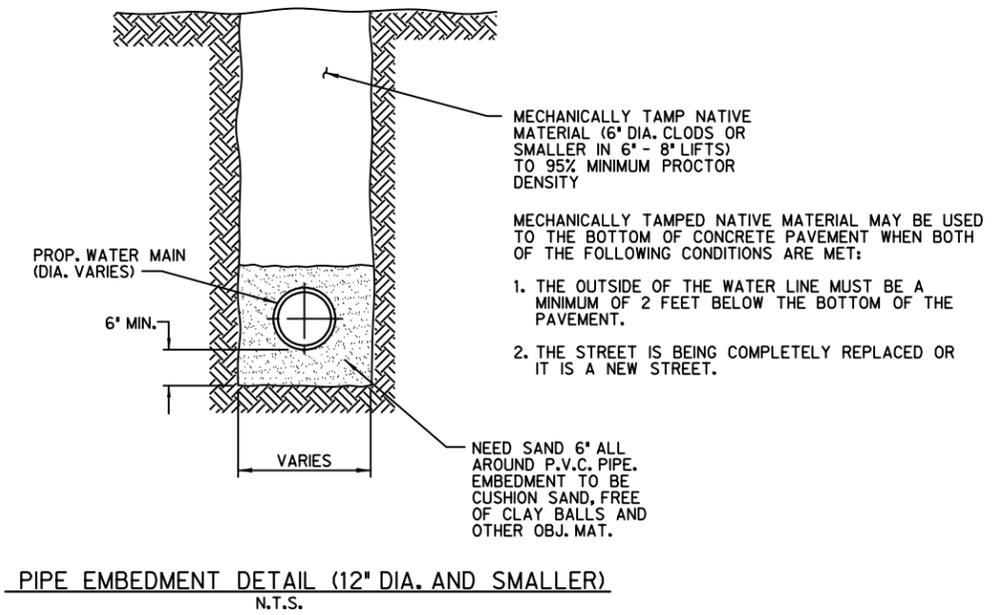
VALVES, HYDRANTS AND GENERAL NOTES



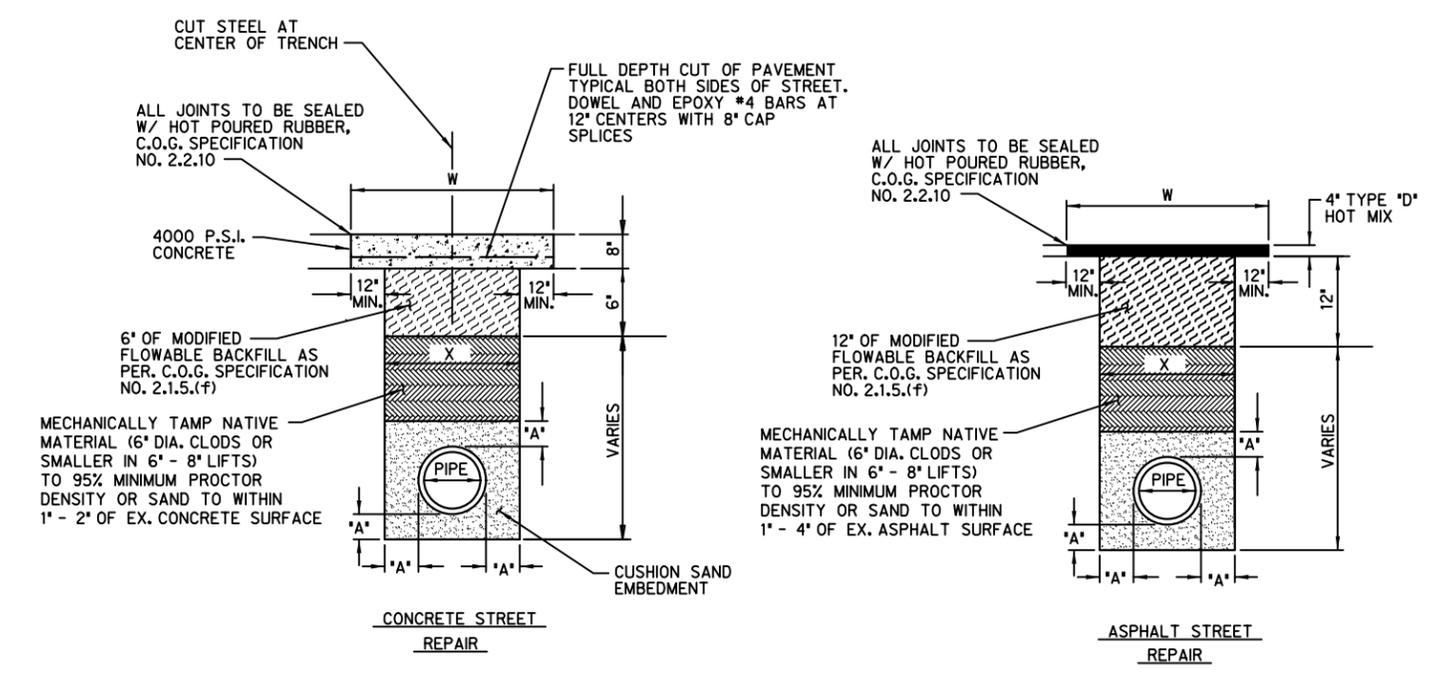
THE CITY OF THE COLONY TEXAS

ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	W-1	104



NOTE:
A COMMERCIALY AVAILABLE MAGNETIC TAPE SHALL BE INSTALLED 12-INCHES ABOVE THE TOP OF ALL PVC WATER PIPE. THE TAPE SHALL BE BLUE IN COLOR AND HAVE THE WORDING "CAUTION WATER LINE BURIED BELOW".

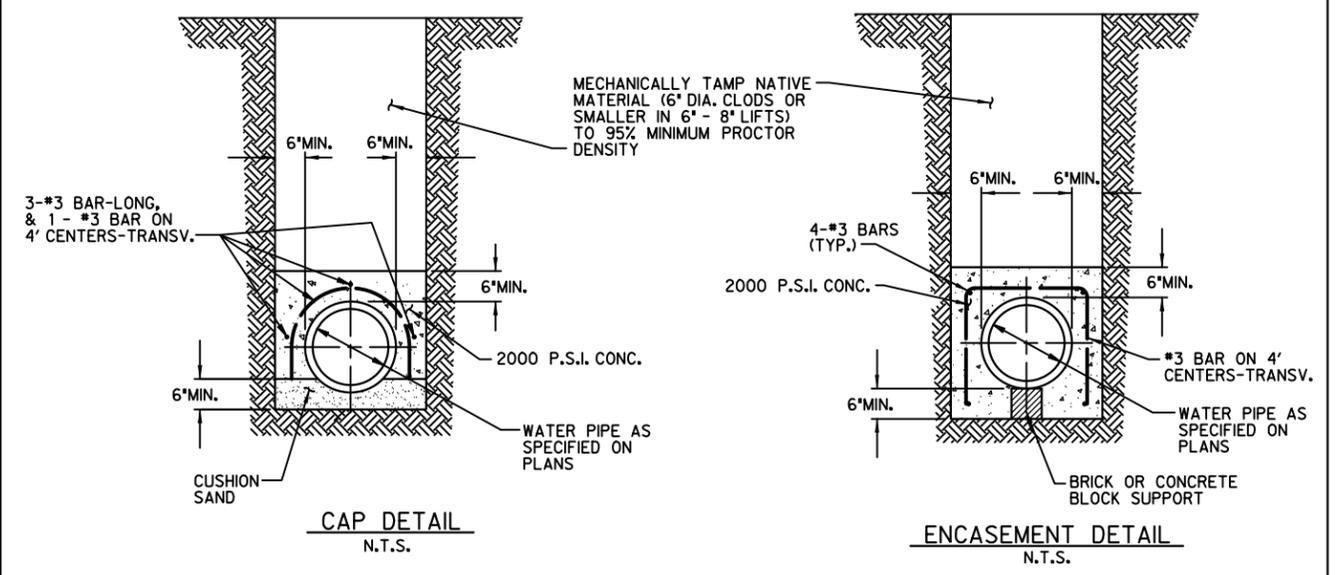


NOTE:
SAWCUT TO REPAIR ASPHALT OR CONCRETE PAVEMENT PRIOR TO OPENING THE DITCH IN ORDER TO ENSURE A NEAT STRAIGHT EDGE.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES (PVC-DR18)	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH ("X")		WIDTH OF PVMT. REPLACEMENT *
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	("W") CONC. & ASPHALT **
6	6.9	6	24	19	48
6	6.9	6	24	19	48
10	11.10	6	28	24	48
12	13.20	6	30	26	50
16+	VARIES	8	*	*	*

NOTE: * REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARIES BASED ON DEPTH, AND SOIL MATERIAL.



CERTIFICATION:
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STATE OF TEXAS
LEIGH A. HOLLE
103573
LICENSED PROFESSIONAL ENGINEER

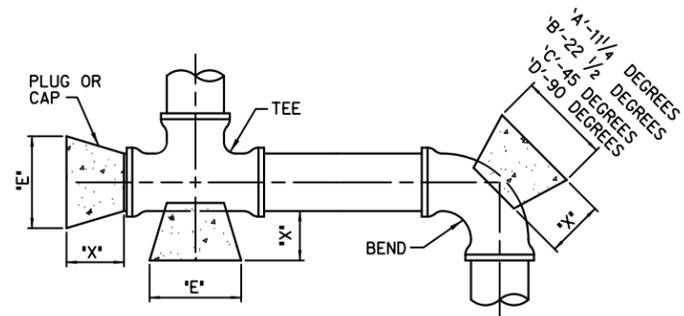
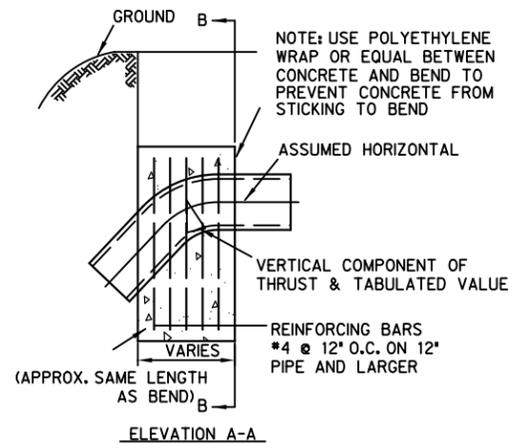
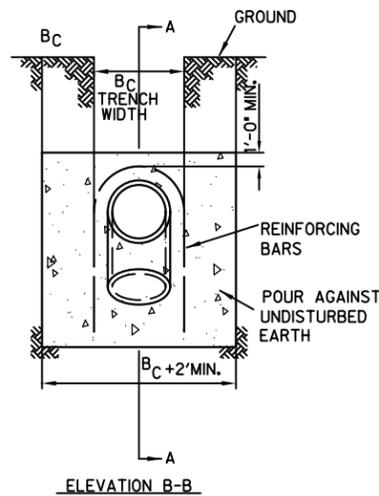
NAME: *Leigh A. Holle*
DATE: 2/20/15
TBPE FIRM #F-312

WATER STANDARD DETAILS

BACKFILL / EMBEDMENT

THE CITY OF THE COLONY TEXAS
ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	W-2	105



△	11.25°		22.50°		30°		45°		67.50°		90°		△
I.D. (IN.)	THRUST TONS	VOL. C.Y.	I.D. (IN.)										
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4,6,8
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10,12
16,18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16,18
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.8	49.0	24.5	53.1	26.5	30
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	76.4	38.2	36
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60
66	50.1	25.0	98.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0	78
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96

PIPE SIZE	X-# DIA. FT.	11/4 DEGREES		22 1/2 DEGREES		45 DEGREES		90 DEGREES		TEE & PLUG	
		A	MIN. AREA	*B*	MIN. AREA	*C*	MIN. AREA	*D*	MIN. AREA	*E*	MIN. AREA
4"	1.5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.00	1.00
6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70
8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02
10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71
12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79
14"	1.5	1.03	1.81	1.90	3.60	2.66	7.07	3.61	13.06	3.04	9.246
16"	2.0	1.18	2.36	2.17	4.71	3.04	9.23	4.13	17.06	3.47	12.06
18"	2.0	1.33	2.99	2.44	5.96	3.42	11.69	4.65	21.59	3.91	15.27
20"	2.0	1.48	3.70	2.71	7.35	3.80	14.43	5.16	26.86	4.34	18.85
21"	2.0	1.55	4.07	2.85	8.11	3.99	15.91	5.42	29.39	4.56	20.78
24"	2.0	1.77	5.32	3.25	10.59	4.56	20.77	6.20	38.39	5.21	27.14
27"	2.5	1.99	6.73	3.66	13.40	5.13	26.29	6.97	48.58	5.86	34.35
30"	2.5	2.22	8.31	4.07	16.55	5.70	32.46	7.74	59.98	6.51	42.41
33"	2.5	2.44	10.06	4.47	20.02	6.27	39.28	8.52	72.57	7.16	51.31
36"	2.5	2.66	11.97	4.88	23.83	6.84	46.74	9.29	86.37	7.81	61.07
39"	3.0	2.88	14.05	5.29	27.97	7.41	54.86	10.07	101.36	8.47	71.68
42"	3.0	3.10	16.30	5.69	32.43	7.98	63.62	10.85	117.56	9.12	83.13

HORIZONTAL THRUST BLOCK NOTES:

1. USE MEGA LUGS OR EQUIVALENT FOR ALL BENDS.
2. ALL CALCULATIONS ARE BASED ON A WATER LINE PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING VALUE OF 2,500 POUNDS PER SQUARE FEET.
3. 2000 P.S.I. CONCRETE SHALL BE USED FOR ALL BLOCKING.
4. THE MINIMUM VERTICAL DIMENSIONS OF ALL BLOCKING SHALL BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 TIMES THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW THE PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "X" DIMENSION FOR 11 1/4° BENDS.
5. FOR 22-1/2°, 45°, 90°, AND TEE AND PLUGS, THE VERTICAL DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENSION SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA.
6. ALL MINIMUM AREAS ARE IN SQUARE FEET.

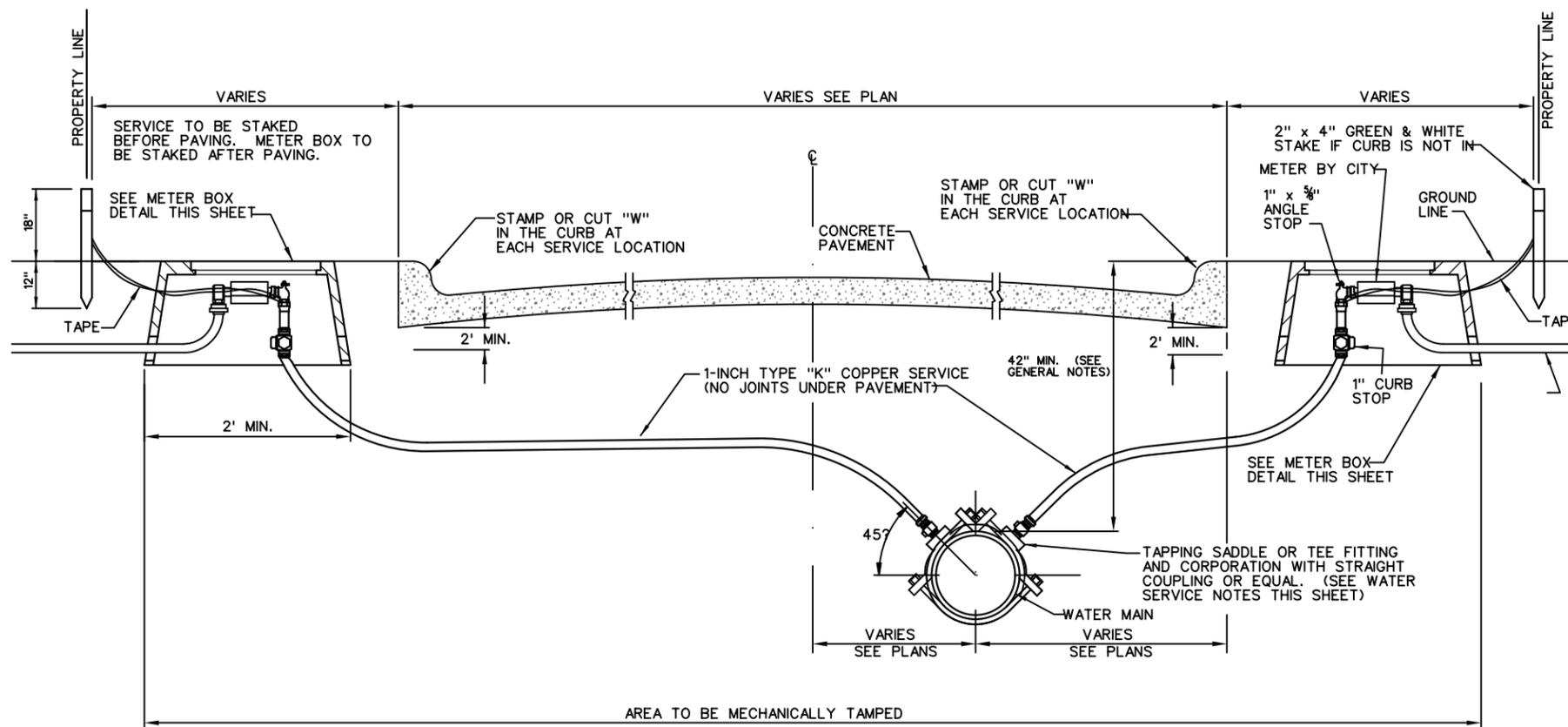
DIMENSIONS OF CONCRETE FOR HORIZONTAL THRUST BLOCKING AT FITTINGS

VERTICAL THRUST BLOCK NOTES:

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I. FOR 24" I.D. PIPE AND SMALLER AND 150 P.S.I. ON 30" I.D. AND LARGER.
2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.
3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
4. CONCRETE FOR BLOCKING SHALL BE 2000 P.S.I. CONCRETE.
5. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.

DIMENSIONS OF CONCRETE FOR VERTICAL THRUST BLOCKS AT FITTINGS

		NAME: <i>Leigh A. Hollis</i> DATE: 2/20/15 TBPE FIRM #F-312		WATER STANDARD DETAILS			
				CONCRETE BLOCKING			
CERTIFICATION: THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.				THE CITY OF THE COLONY TEXAS			
				ENGINEERING DEPARTMENT			
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.	
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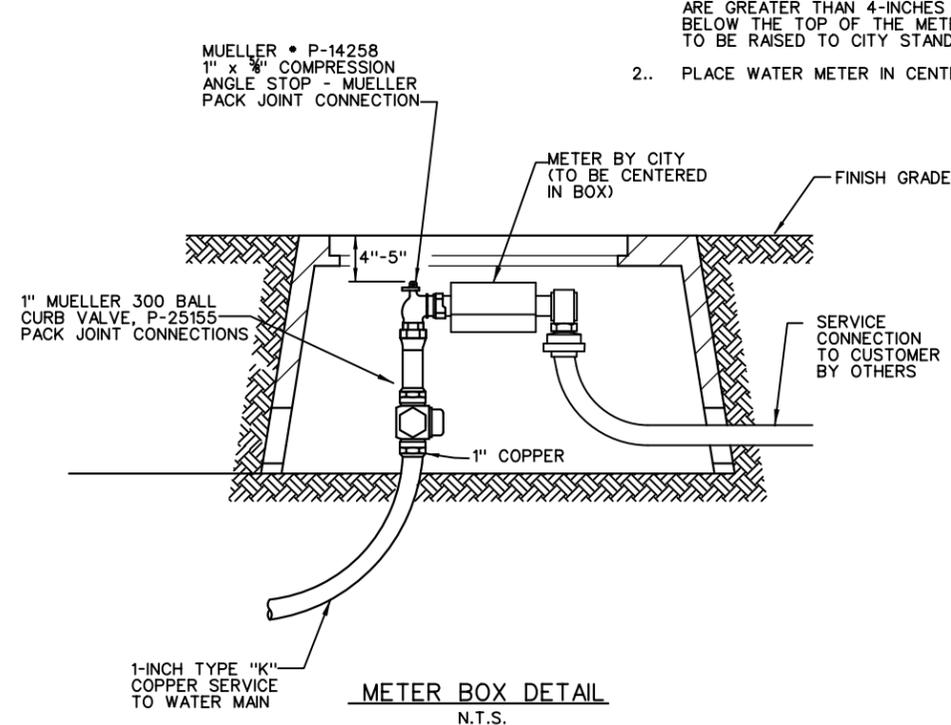
WATER SERVICE DETAIL
N.T.S.

WATER SERVICE NOTES:

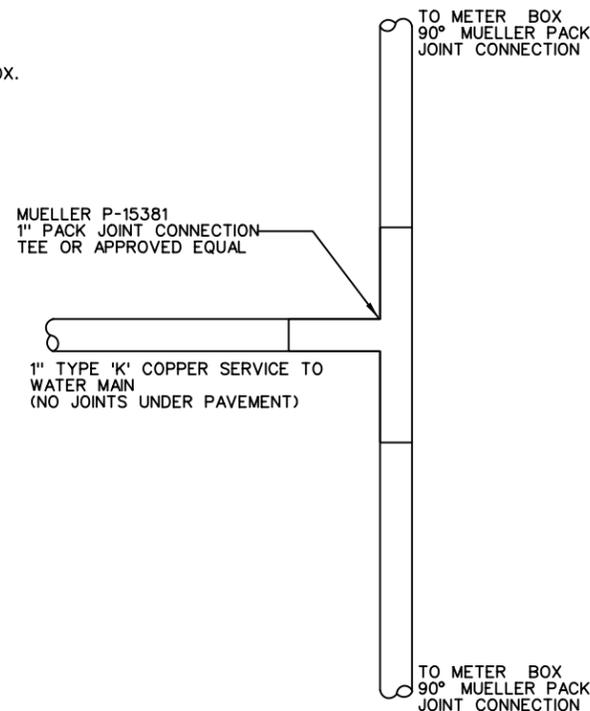
- All property corners shall be staked with iron rods prior to the installation of any water services. Water service locations shall be staked in the field in accordance with Note 4 below.
- Water services shall not be connected to fire hydrant lead lines.
- All material shall conform to the standard specifications. See the "City of the Colony Addendum to the North Central Texas Council of Governments Standard Specifications for Public Works Construction" for a list of approved materials.
- Residential water services shall be placed in the center of the lot with the sanitary sewer house connection placed 10 feet downstream. All taps shall be made at a 45 degree angle to the center of the pipe.
- The Contractor shall set the meter boxes in all cases. The meter box shall be set within the right-of-way or a dedicated utility easement. The meter box shall be protected from vehicular traffic except as provided in Note 19 below.
- It is the responsibility of the Contractor to furnish and install the corporation, water service pipe, cut-off angle valve, the connector pipe, and meter box, as per the details on this sheet.
- Direct taps are not allowed, saddles shall be used.
- Cutter for taps shall be of the double slotted type.
- Taps shall have double brass saddles with a minimum width of 2 inches to provide full support and shall be Mueller BR2B or approved equal.
- All taps larger than 2-inch shall be made using tapping tees.
- Taps shall be a minimum of 1 foot apart with taps no closer than 1 foot from the end of the pipe.
- All house services shall be 1-inch Type "K" soft drawn copper.
- Contractor may use either flared or compression fittings with pack joint connection with locked ends.
- No splices of water services shall be permitted under pavement unless approved by the City Engineer.
- Where splices are approved by the City Engineer, use a 3 part union copper to copper, Mueller H-15400 flared fitting, or Mueller H-15405 compression fitting with restrained union, or equal.
- Corporations shall be minimum 1-inch. Mueller H-15000 flared corporation, or Mueller P-15008 pack joint corporation or approved equal.
- Angle stops shall be Mueller P-14258 or approved equal.
- Meter boxes for 1-inch services shall be NDS AMR D12000-OTLR. Meter boxes for 1-1/2-inch and 2-inch meters shall be NDS D15AMR2-OLLOC. Meters shall be centered in boxes.
- Meter boxes shall be located outside of all flatwork, sidewalks and approaches, except when approved by the building official. A water meter service located in an area subject to vehicular traffic must employ a traffic rated meter box and lid with automatic meter reading capabilities.
- No 90 degree bends may be installed in services, except as shown.
- All water services to be marked by "W" stamped or cut on the curb.

METER BOX NOTES:

- WHEN EXISTING WATER MAINS ARE BEING REPLACED, ANY WATER METERS FOUND WITHIN THE LIMITS OF THE PROJECT THAT ARE GREATER THAN 4-INCHES TO 5-INCHES BELOW THE TOP OF THE METER BOX ARE TO BE RAISED TO CITY STANDARDS.
- PLACE WATER METER IN CENTER OF METER BOX.



METER BOX DETAIL
N.T.S.



BULLHEAD CONNECTION
N.T.S.

ABANDONING EXISTING SERVICE:

- Remove tap and saddle and corporation from the main and install full circle clamp.



NAME: *Leigh A. Hollie*
DATE: 2/20/15
TBPE FIRM #F-312

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WATER STANDARD DETAILS

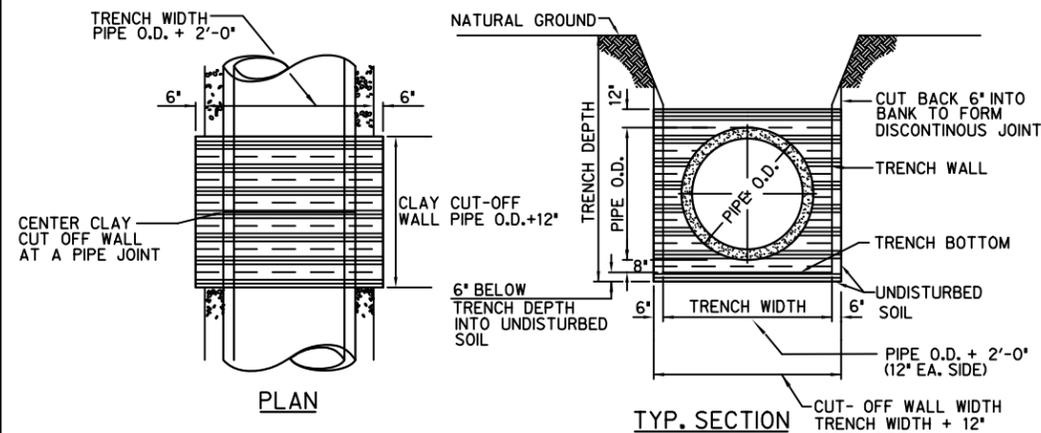
WATER SERVICES



THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

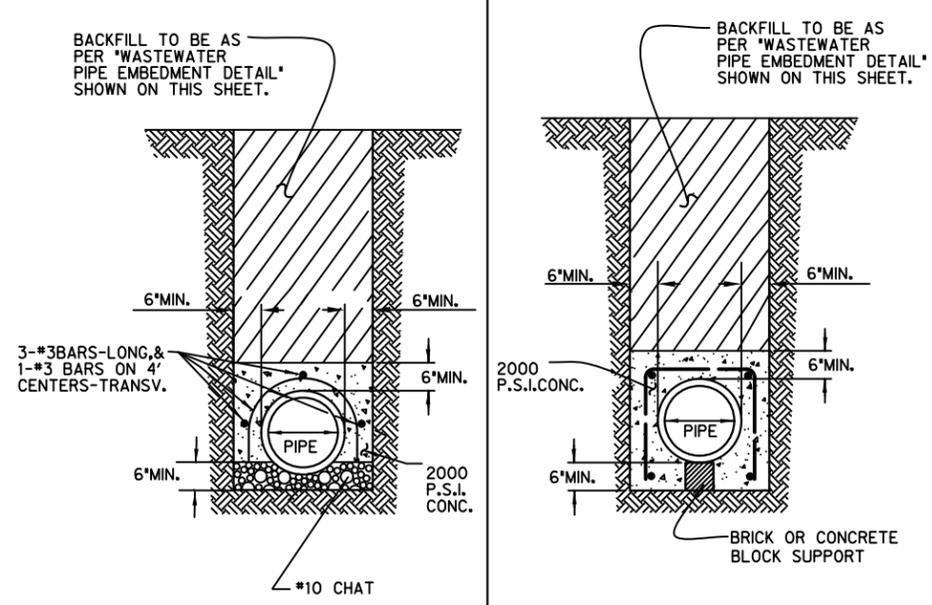
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CLAY CUT-OFF WALL NOTES:

1. CLAY CUT-OFF WALLS SHALL BE CONSTRUCTED AT 250 FOOT INTERVALS ALONG ALL WASTEWATER MAIN INSTALLATIONS BETWEEN MANHOLES
2. THE CLAY CUT-OFF WALL SHALL BE PLACED AT THE MID POINT OF THE LENGTH OF THE PIPE BEING PLACED, BUT NOT AT A LOCATION WHERE A LATERAL OR SERVICE CONNECTS TO THE MAIN. THE MINIMUM CLEARING IS 10 FEET.
3. MATERIAL FOR CLAY CUT-OFF WALL TO BE CLEAN MATERIAL WITH NO LUMPS LARGER THAN 3". CLAY TO HAVE P.I. OF 30 TO 40. MATERIAL TO BE PLACED IN 6" LIFTS, MOISTENED TO OPTIMUM MOISTURE CONTENT AND COMPACTED WITH HAND HELD MECHANICAL TAMPERS WITHOUT DAMAGING THE PIPE.

CLAY CUT-OFF WALL
N.T.S.



CAP DETAIL
N.T.S.

ENCASUREMENT DETAIL
N.T.S.

SANITARY SEWER GENERAL NOTES

GENERAL:

- (A) All construction shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the 'Standard Specifications for Public Works Construction - North Central Texas' herein referred to as 'COG' specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.
- (B) Refer to COG Division 500 specifications.

PIPE:

- (A) Wastewater mains shall be Polyvinyl Chloride PVC SDR 35 for depths less than 14 feet and SDR 26 for deeper installation, unless specified and approved otherwise by the City Engineer.
- (B) For creek crossings with a minimum cover of 5 feet to the creek flowline, the pipe shall be PVC with concrete encasement. For creek crossings with less than 5 feet of cover to the creek flowline, the pipe shall be cement-lined ductile iron pipe with polywrap. Each joint shall be strapped to a concrete pier drilled to a depth of at least 10 feet below the flowline of the pipe.
- (C) Embedment shall be as per the 'Wastewater Pipe Embedment Detail' on this sheet.
- (D) The minimum cover over all Wastewater mains is 4 feet, unless approved by the City Engineer. Approved mains with less than 3.5 feet of cover shall be capped as per the 'Cap Detail' on this sheet.
- (E) Clay cut-off walls shall be constructed as per the details and specifications on this sheet.
- (F) Storage: PVC wastewater pipe is allowed to be stored a maximum of six (6) months without cover. Thereafter all pipes should be covered or kept away from sunlight and to be protected from other elements.
- (G) Casings: When PVC Wastewater pipe is installed in casing, skids must be used to prevent damage to the pipe and bell during installation. PVC pipe should not rest on the bells. Plastic spacers such as RAClor approved equal shall be used.

WASTEWATER SERVICE NOTES:

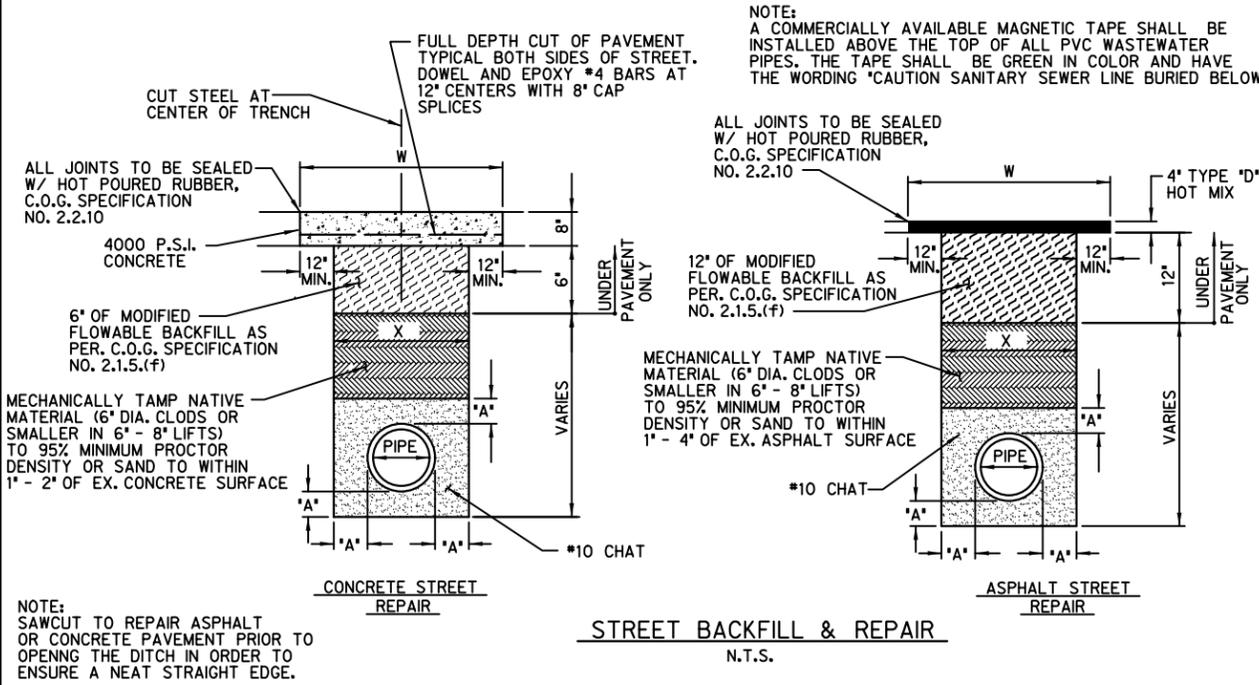
- (A) All property corners shall be staked with iron pins prior to the installation of any wastewater services. The locations of the wastewater service shall be staked according to the plans.
- (B) Wastewater services to be marked with 'S' stamped or cut in the curb.
- (C) Refer to the details and notes on this sheet.

MANHOLES:

- (A) Only concrete manholes are approved for use on the main and at the ends.
- (B) All new manhole locations shall be marked with 'MH' stamped or cut on the curb.
- (C) Refer to the details and notes on this sheet and COG Item 502.12 specifications.
- (D) Manholes greater than 8' deep shall have a minimum inside diameter of 60 inches.

TESTING:

- The following tests shall be performed:
- (A) Low Pressure Air Testing as per COG Item 507.5.1.3 specifications.
 - (B) Deflection Test as per COG Item 502.12 specifications.
 - (C) Television Inspection as per the City of the Colony specifications.

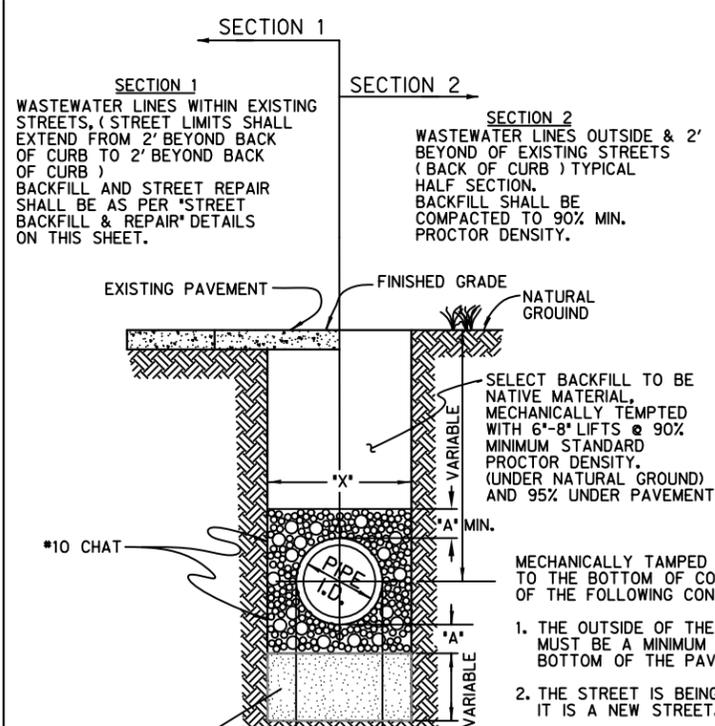


STREET BACKFILL & REPAIR
N.T.S.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES (PVC-SDR35)	MINIMUM TRENCH WALL CLEARANCE 'A' IN INCHES	WIDTH OF TRENCH ('X')		WIDTH OF PVMT. REPLACEMENT * ('W') CONC. & ASPHALT **
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	
4	4.67	6	24	18	42
6	6.74	6	24	19	48
8	8.99	6	24	21	48
10	11.27	6	28	24	48
12	13.27	6	30	26	50
15	16.45	8	37	33	57
18	20.73	8	41	37	61
21	24.42	8	45	41	65
24	27.21	8	48	44	68
27	30.61	8	51	47	71

NOTE: * REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARIES BASED ON DEPTH, AND SOIL MATERIAL.



WASTEWATER PIPE LINE EMBEDMENT DETAIL
PVC SDR - 35
N.T.S.



NAME: Leigh A. Hollis
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:

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WASTEWATER STANDARD DETAILS

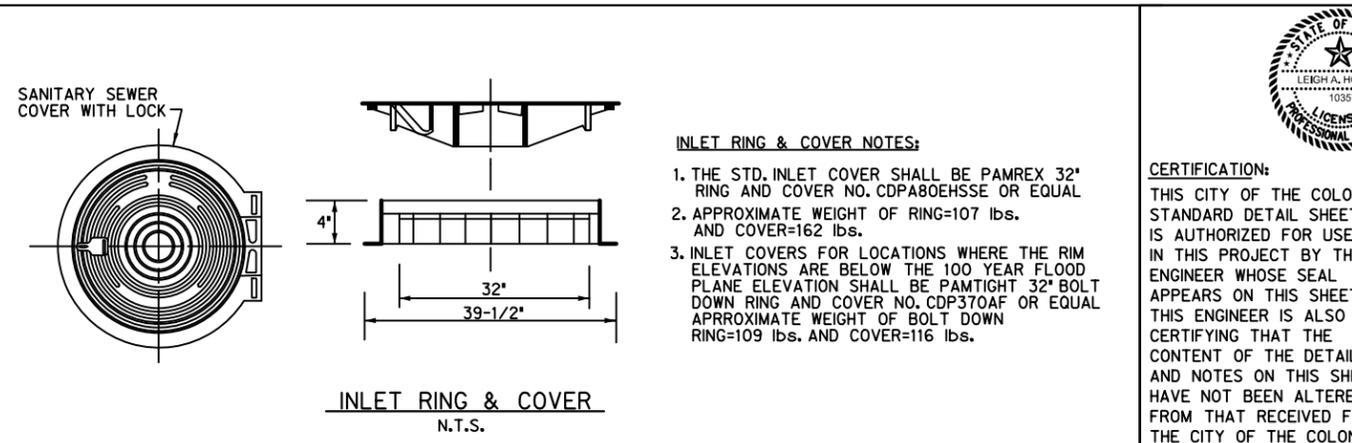
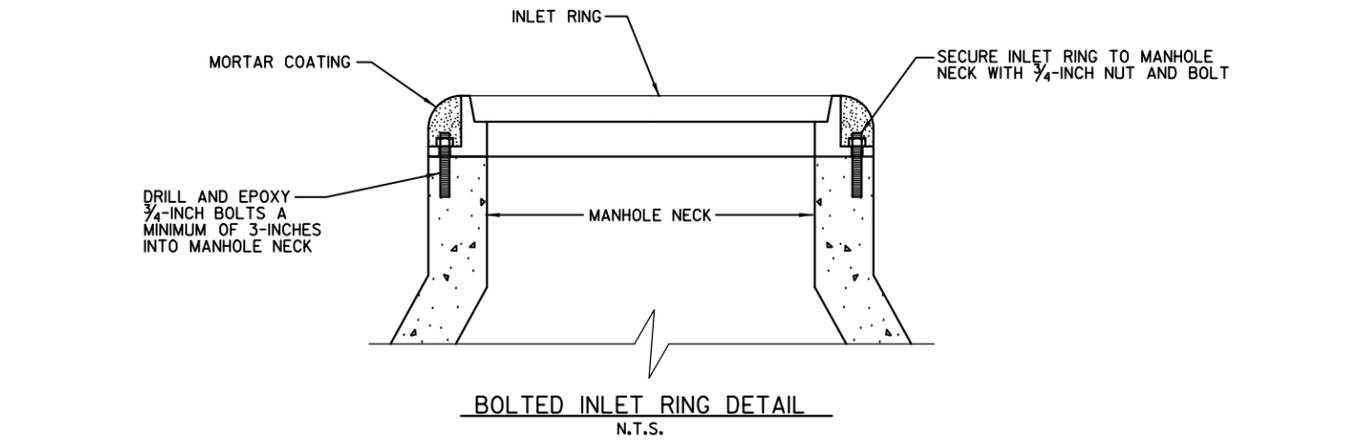
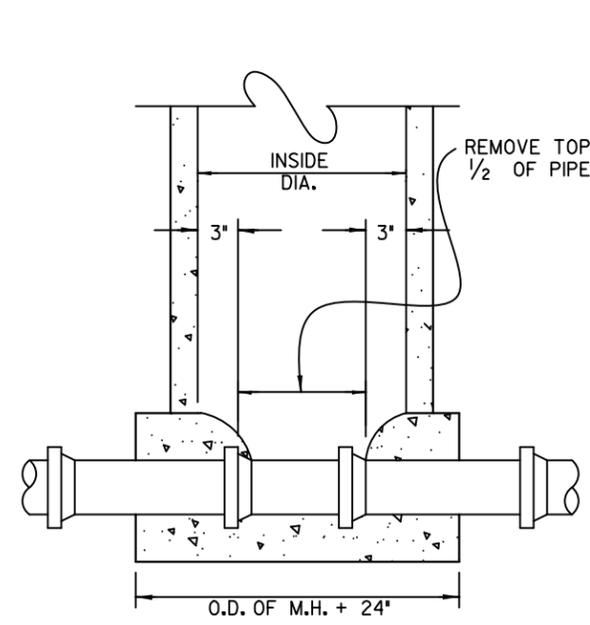
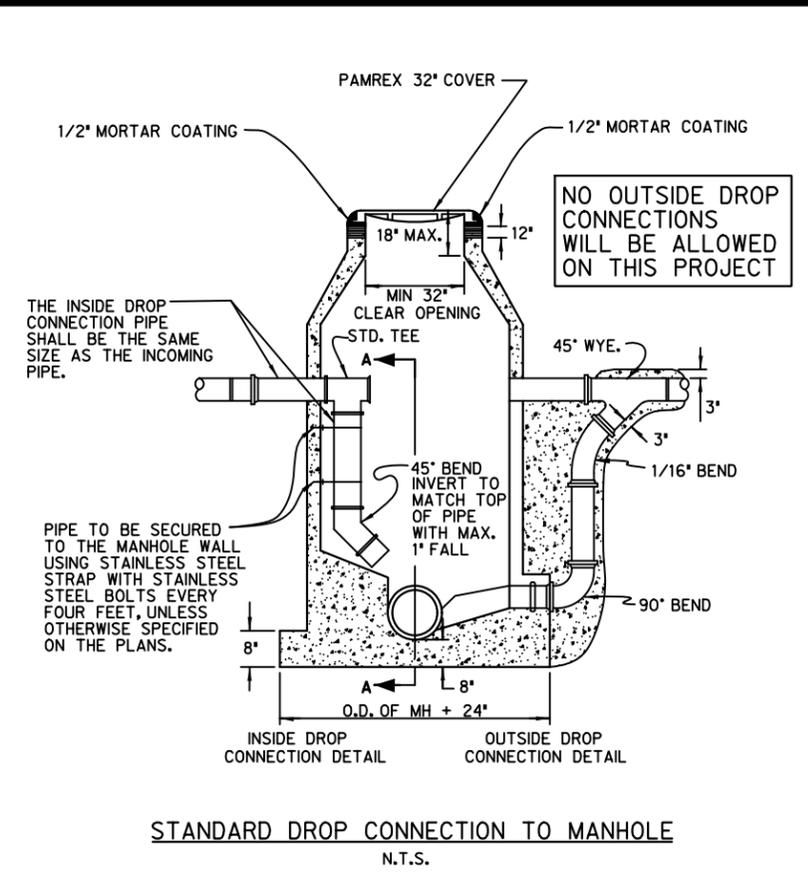
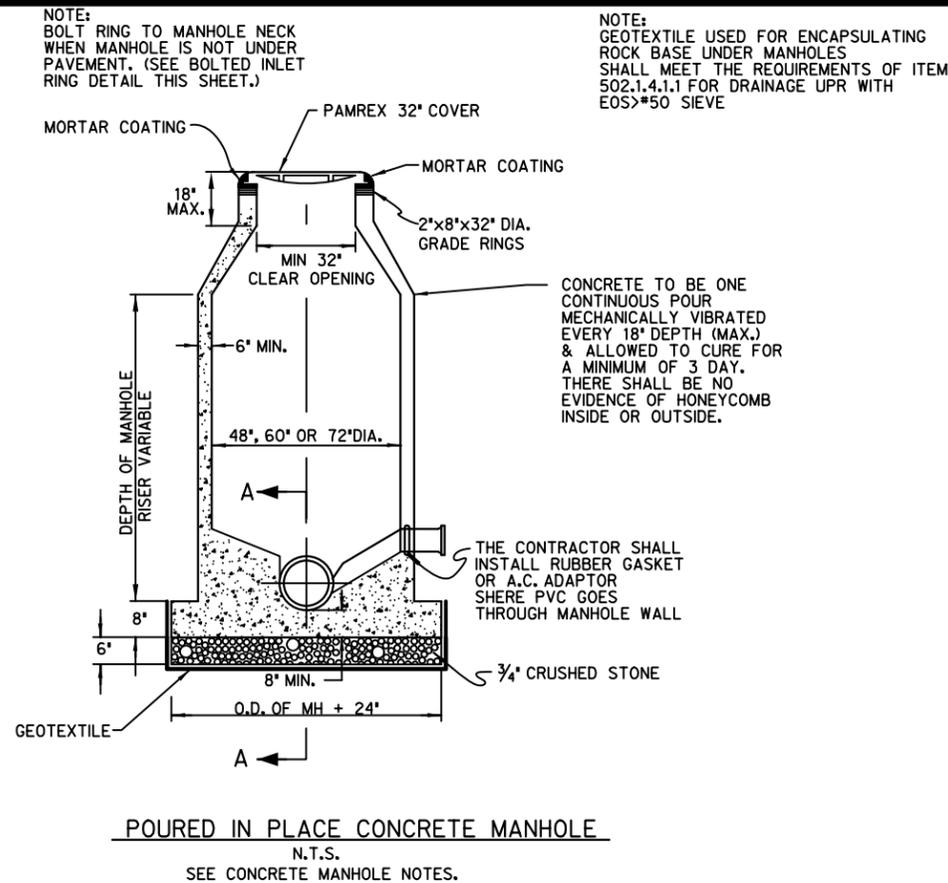
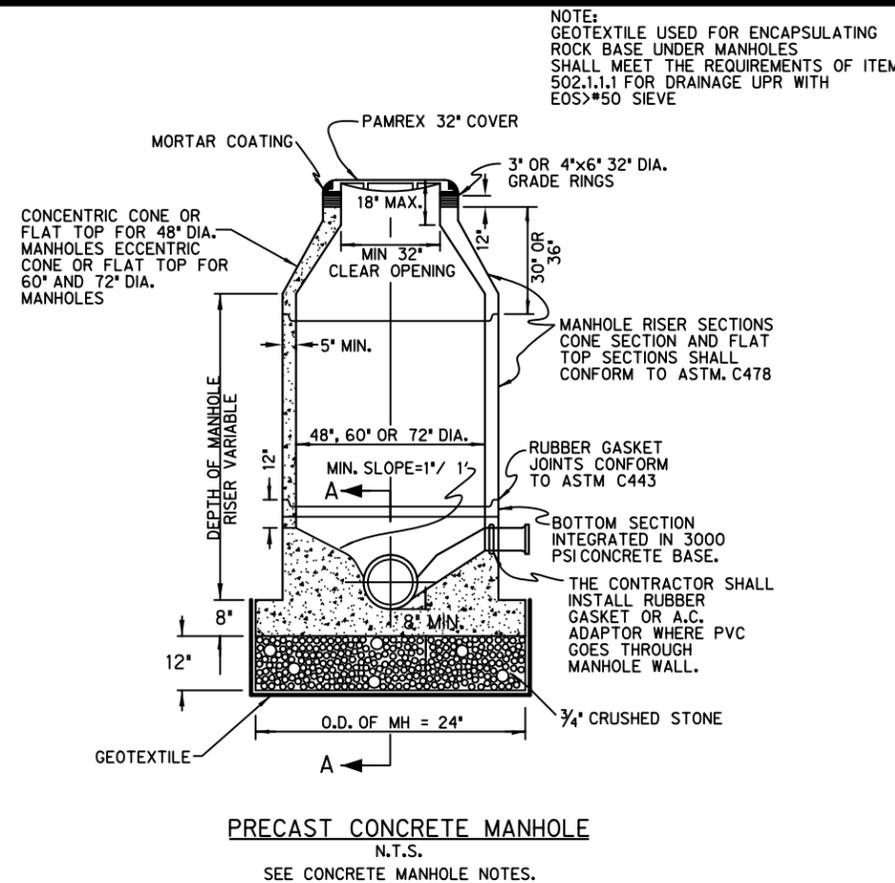
BACKFILL / EMBEDMENT AND GENERAL NOTES



THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	S-1	108



- CONCRETE MANHOLE NOTES:
1. CONCRETE FOR ALL PRECAST AND POURED IN PLACE MANHOLES SHALL BE 6.5 SACK, 4200 P.S.I. SULPHATE RESISTANT CONCRETE, WITH A C3A CONTENT OF 5%.
 2. THE DIAMETER OF THE CONCRETE BASE SHALL NOT BE LESS THAN THE INSIDE DIAMETER OF THE MANHOLE PLUS 2 FEET.
 3. STEPS SHALL NOT BE INSTALLED IN MANHOLE.
 4. ALL NEW MANHOLES SHALL BE MARKED WITH "MH" STAMPED OR CUT IN THE CURB.
 5. USE DROP CONNECTIONS WHEN CONNECTING LINE EXCEEDS 24" ABOVE THE MANHOLE FLOWLINE.
 6. USE OUTSIDE DROP CONNECTIONS ON ALL NEW MANHOLES.
 7. USE INSIDE DROP CONNECTION ON EXISTING MANHOLES ONLY.



NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

CERTIFICATION:
 THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

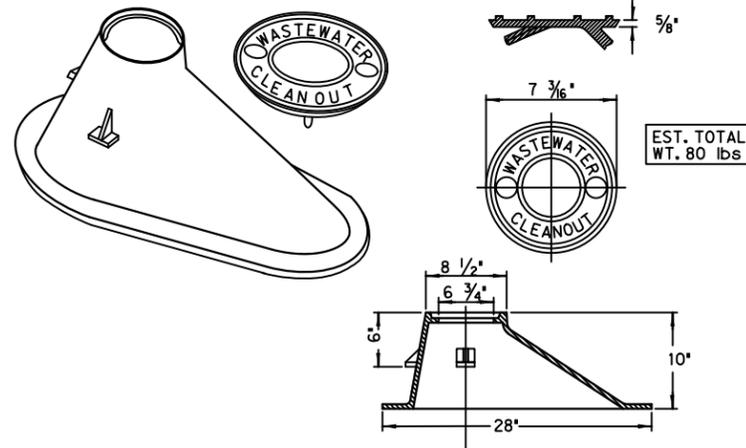
WASTEWATER STANDARD DETAILS

MANHOLES

THE CITY OF THE COLONY TEXAS
 CITY BY THE LAKE

THE CITY OF THE COLONY TEXAS
 ENGINEERING DEPARTMENT

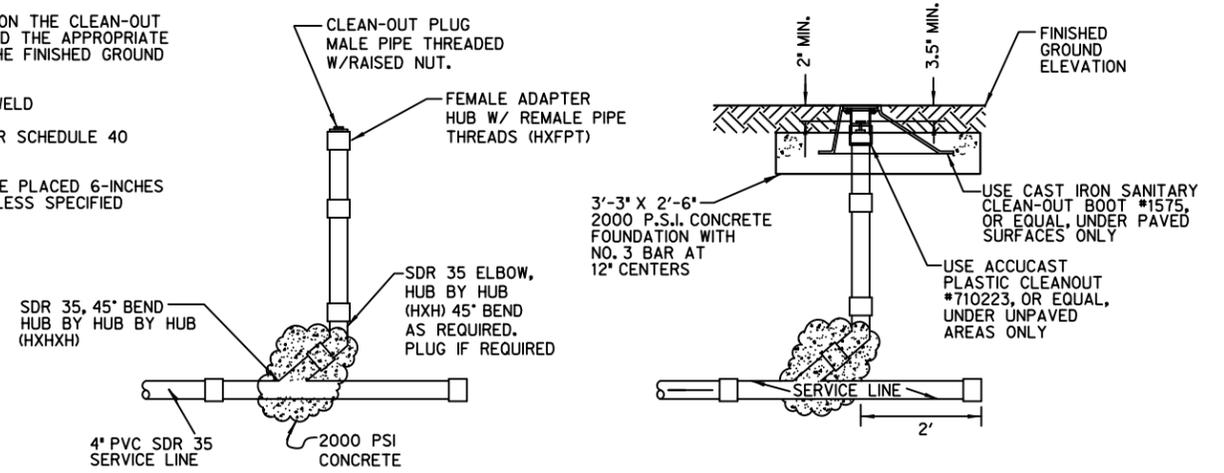
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	AUGUST 2013	N.T.S.	S-2	109



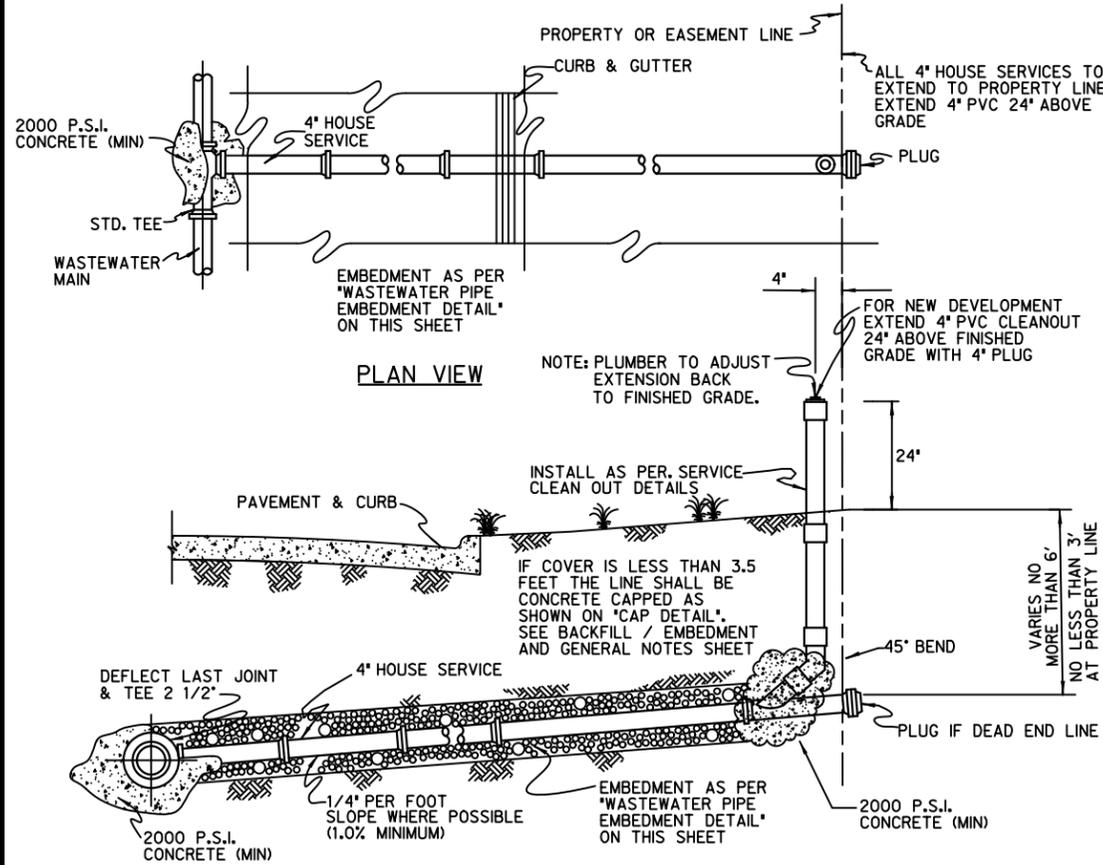
ACCUCAST CAST IRON CLEAN-OUT BOOT
N.T.S.
ACCUCAST #1575 OR EQUAL
(TO BE USED UNDER PAVED SURFACES ONLY)

WASTEWATER SERVICE CLEAN-OUT NOTES:

1. FOR NEW DEVELOPMENT EXTEND 4-INCH PVC CLEAN-OUT 24-INCHES ABOVE FINISHED GRADE WITH 4-INCH PLUG.
2. AT THE TIME OF SERVICE CONNECTION THE CLEAN-OUT EXTENSION SHALL BE ADJUSTED AND THE APPROPRIATE CLEAN-OUT BOOT INSTALLED AT THE FINISHED GROUND ELEVATION.
3. ALL FITTINGS SHALL BE SOLVENT WELD
4. ALL PIPE SHALL BE PVC SDR 35 OR SCHEDULE 40 WHEN LESS THAN 14- FEET DEEP
5. CENTER LINE OF CLEAN-OUTS TO BE PLACED 6-INCHES INSIDE CITY RIGHT-OF-WAY LINE UNLESS SPECIFIED OTHERWISE.



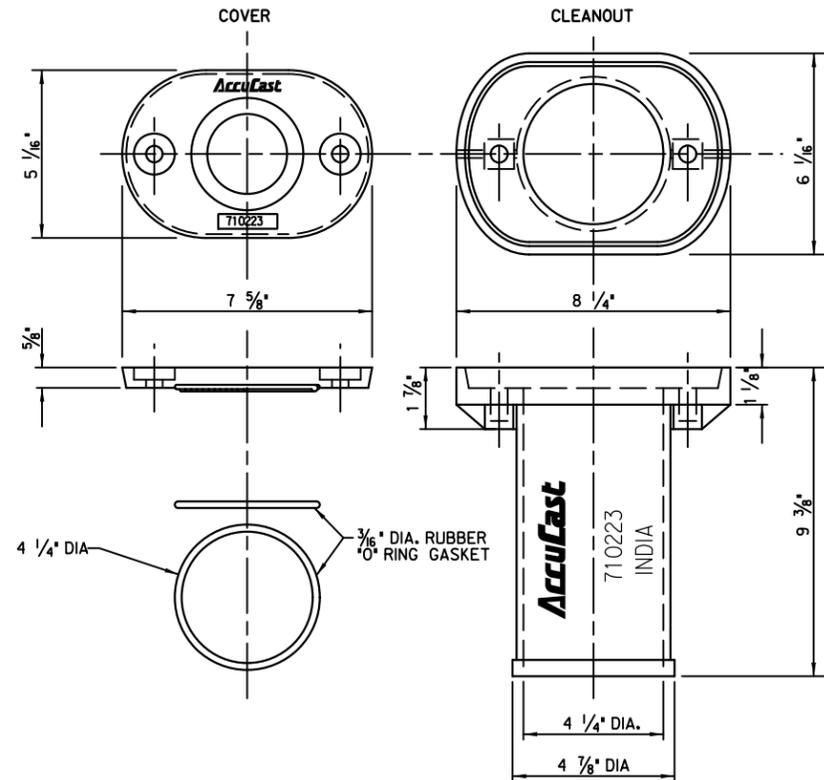
WASTEWATER SERVICE CLEAN-OUT DETAILS
N.T.S.



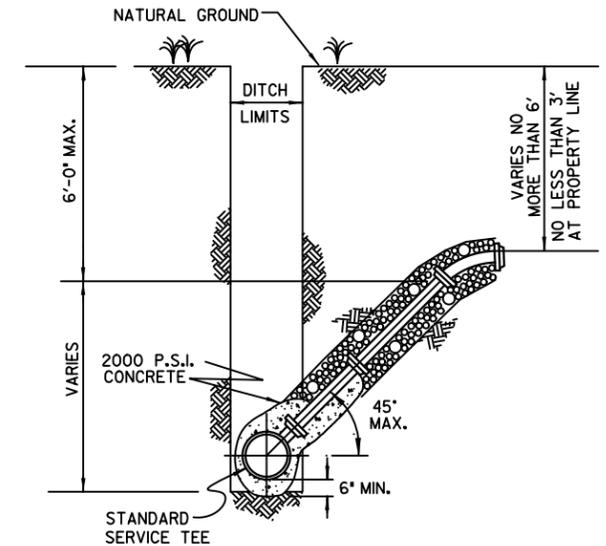
PROFILE VIEW

STANDARD WASTEWATER SERVICE CONNECTION
N.T.S.

NOTE: WASTEWATER SERVICES TO BE MARKED WITH 'S' STAMPED OR CUT IN CURB.



ACCUCAST PLASTIC SEWER CLEANOUT
ACCUCAST #710223 OR EQUAL
(TO BE USED UNDER UNPAVED SURFACES ONLY)
NOT TO SCALE



STANDARD DEEP CUT CONNECTION
N.T.S.

NOTE: THE EXTENSION TO THE PROPERTY/EASEMENT LINE SHALL BE AS PER THE STANDARD WASTEWATER SERVICE CONNECTION DETAIL, ON THIS SHEET.



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

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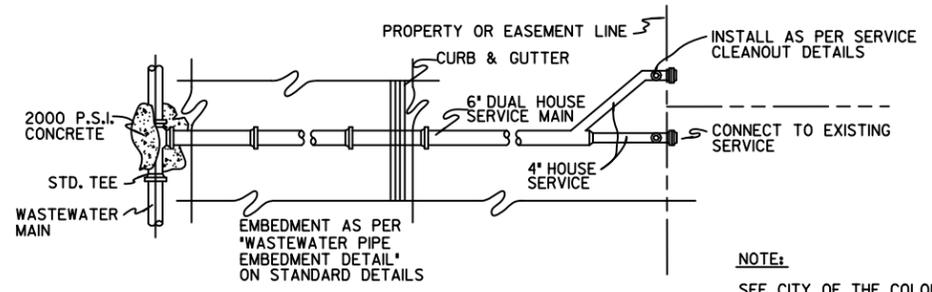
WASTEWATER STANDARD DETAILS

SERVICES



THE CITY OF THE COLONY
TEXAS
ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	S-3	110



6" SANITARY SEWER SERVICE WITH 4" WYE
N.T.S.

NOTE:
SEE CITY OF THE COLONY WASTEWATER STANDARD DETAILS FOR ADDITIONAL DETAILS.

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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE AS NOTED
CADD DRAWN	
B.L.M. CHECKED	
AVO: 30537 FILE: 27869DTSS04.dgn	



HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM *F-312



THE COLONY
City by the Lake

MISCELLANEOUS SANITARY SEWER DETAILS

PHASE V STREET RECONSTRUCTION

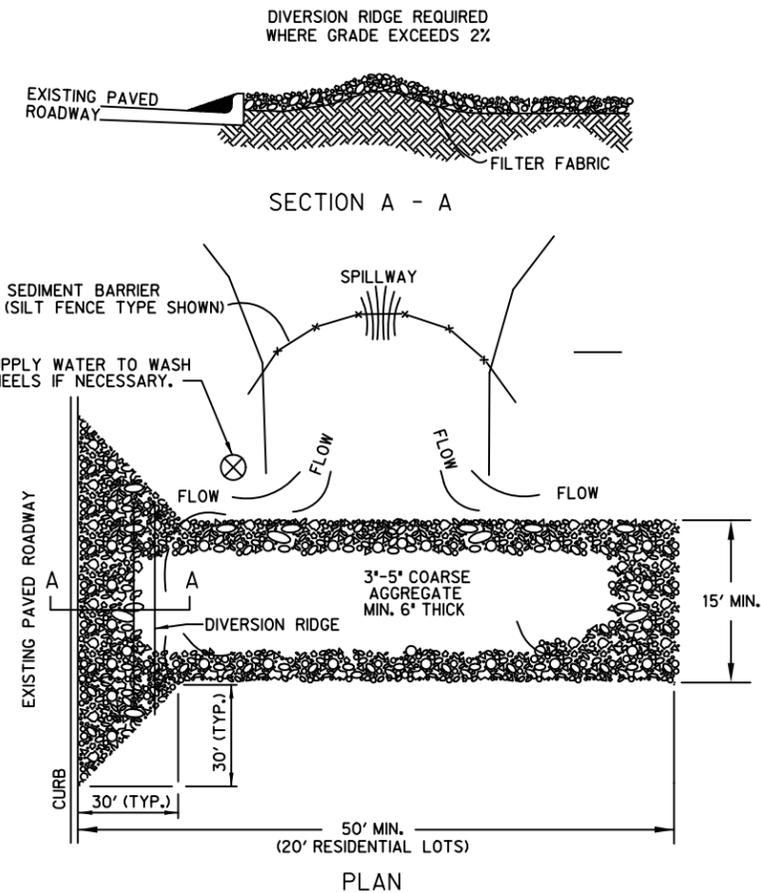
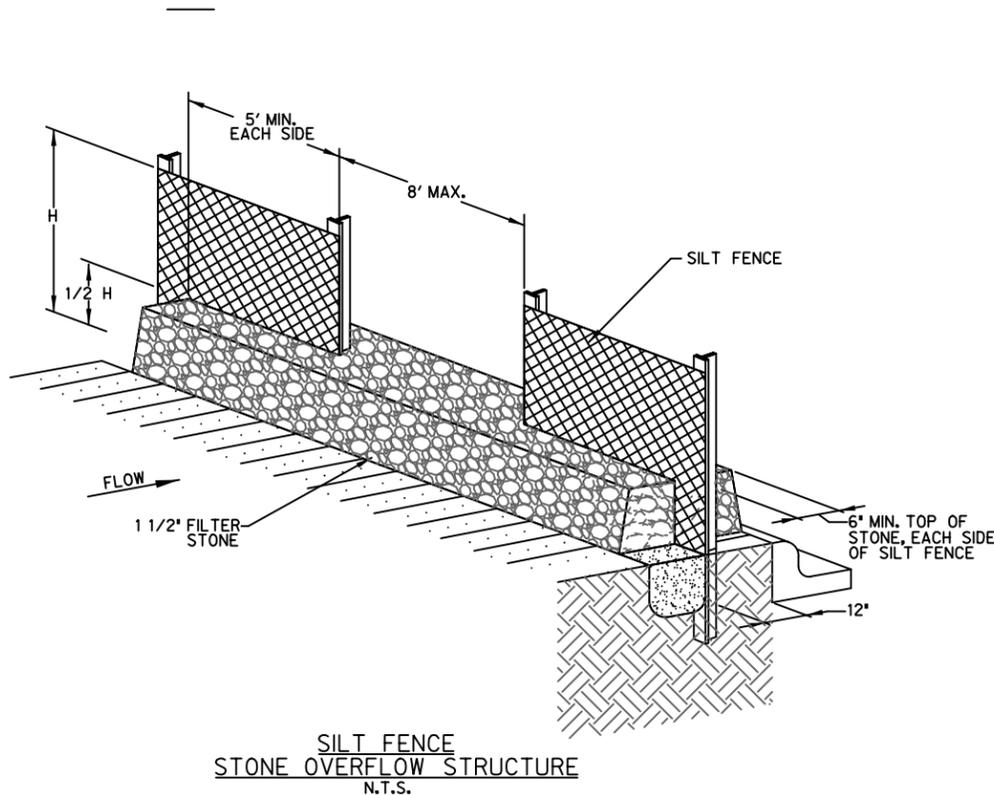
SHEET
111

CITY BID No.
69-11-15-PHASE V

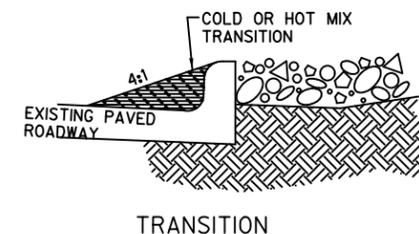
PHASE IV STREET RECONSTRUCTION

SILT FENCE GENERAL NOTES

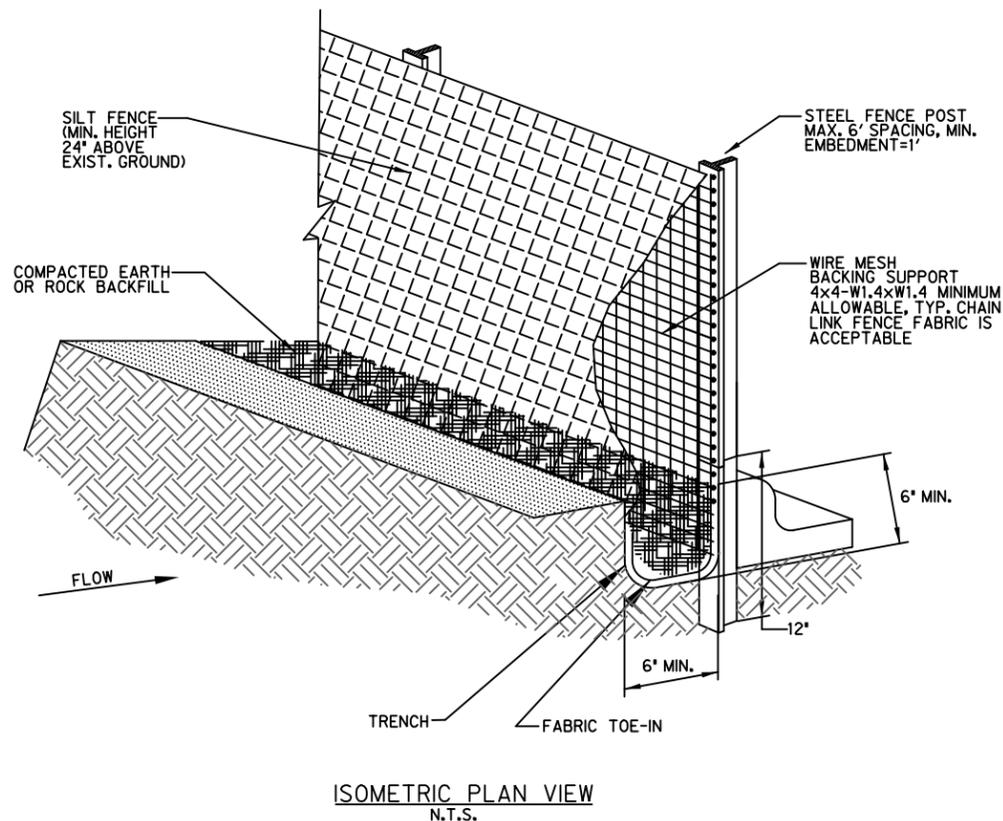
- (1) STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- (2) THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- (3) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- (4) SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
- (5) INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- (6) SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- (7) ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.



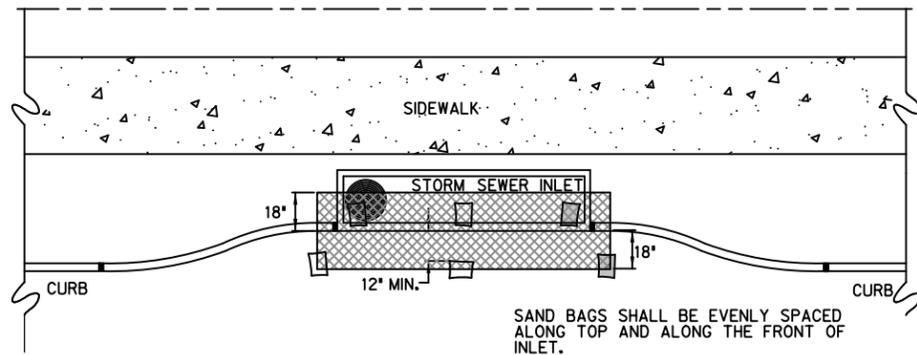
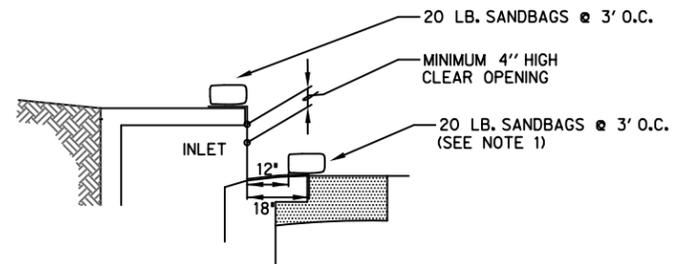
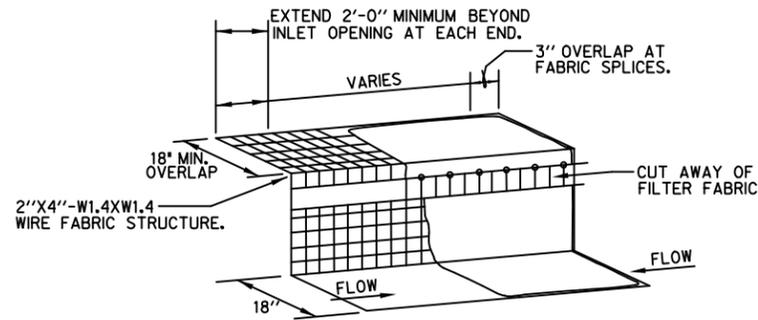
WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.



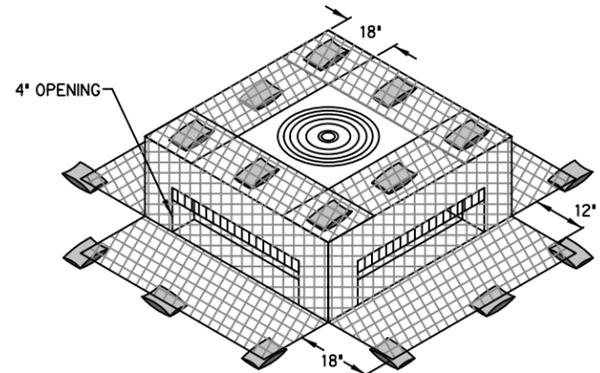
TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT N.T.S.



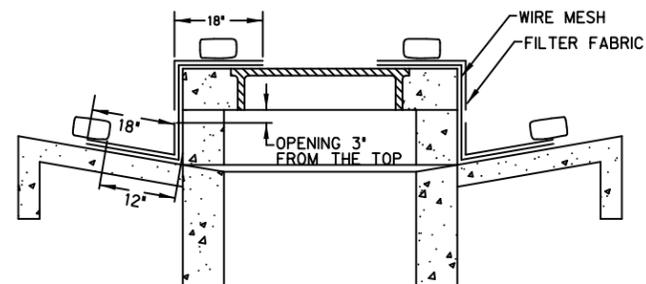
<p>CERTIFICATION: THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.</p>						
<p>NAME: <i>Leigh A. Hollis</i></p>		<p>DATE: 2/20/15</p>				
<p>TBPE FIRM #F-312</p>						
<p>EROSION CONTROL DETAILS</p>						
<p>SHEET 1 OF 2</p>						
<p>THE CITY OF THE COLONY TEXAS</p>						
<p>ENGINEERING DEPARTMENT</p>						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	EC-1	112



CURB INLET PROTECTION DETAIL
 N.T.S.



ISOMETRIC VIEW



SECTION

FILTER FABRIC WYE INLET PROTECTION
 N.T.S.

ESTABLISHMENT OF GROUND COVER

- (1) Eighty percent (80%) evenly distributed ground cover, without large bare areas, shall be established after the designated areas have been completed to the lines, grades and cross sections shown on the plans and prior to final acceptance by the City Engineer.
- (2) Ground cover, for Seeding Turf Grass, shall be in accordance with the standard specifications of the City of The Colony, which has also adopted the Fourth Edition of the 'Standard Specifications For Public Works Construction - North Central Texas' herein referred to as 'COG' specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300. A copy of the contract documents, plans and specifications shall be available on-site at all times by the Contractor.
- (3) Refer to COG Item 202.6 specifications.
- (4) Prior to planting, contractor shall provide the City Engineer, or his designee, with the State of Texas Certificate stating analysis of purity and germination of seed.
- (5) Planting season and application rates. All planting shall be done between the dates specified in Table 1, for each grass type except when specifically authorized in writing. The seeds planted per acre shall be of a type specified with the mixture, rate and planting dates as shown in the Table 1, or as specified by the Engineer.

TYPE	PLANTING SEASON	SEED AND RATE
TYPE I	MARCH THROUGH SEPTEMBER	BERMUDA GRASS, HULLED 50-LB (22.7-KG) PLS PER ACRE
TYPE II	OCTOBER THROUGH FEBRUARY	RYE GRASS, 100-LB (45.4-KG) PLS PER ACRE COMBINED WITH BERMUDA GRASS, HULLED 20-LB (9.1-KG) PLS PER ACRE.
OTHER	AS SPECIFIED ON PLANS	AS SPECIFIED ON PLANS

¹PLS - Pure Live Seed is determined by multiplying the gross weight times purity times the germination [For example, a 100-lb bag with 85% purity and 80% germination. (PLS=pounds in bag x Purity x germination) 100 x 0.85 x 0.8 = 60.8 -lbs of pure live seed.]

- (6) Seeded areas shall be maintained, including watering and mowing, at such time and in a manner and quality to establish a minimum 80% evenly distributed ground cover, without large bare areas, until completion and final acceptance of the project by the City Engineer.

NOTES:

- (1) A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4-INCH MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
- (2) INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2-INCHES.
- (3) CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
- (4) INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

INLET OPENING	MINIMUM NUMBER OF SAND BAGS	
	TOP	FRONT
5'	2	3
10'	3	3
15'	3	4
20'	4	4



NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312

CERTIFICATION:
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EROSION CONTROL DETAILS

SHEET 2 OF 2

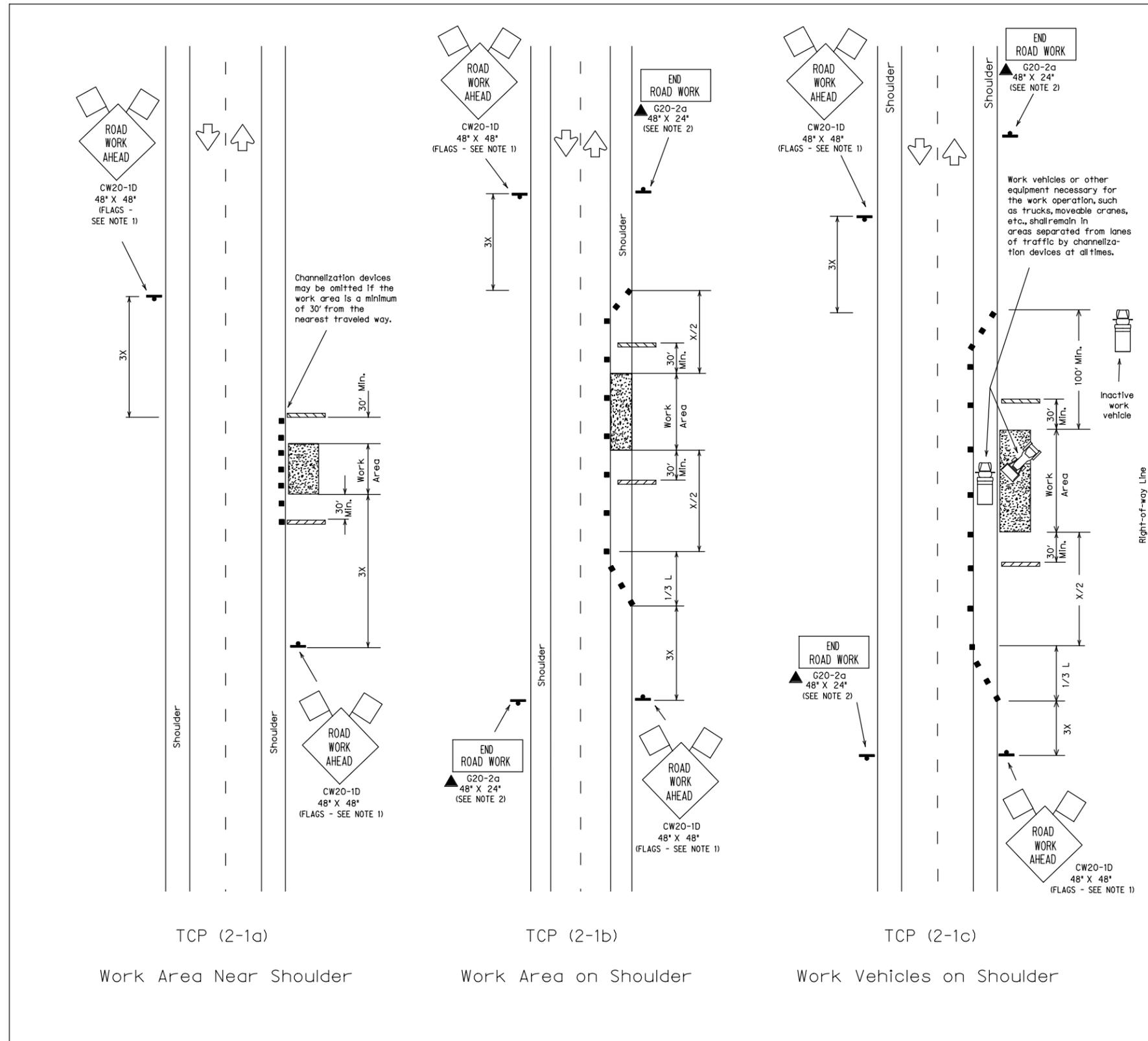


THE CITY OF THE COLONY
 TEXAS

ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	EC-2	113

2/17/2015 2:34:12 PM ah2789 HALF R:\30000s\30537\CADD\Sheets\27869DTC01.dgn PDF_2D_MON_FV_MR_600.plt Design



LEGEND

- TYPE III BARRICADE
- CHANNELIZING DEVICES
- FLAG
- HEAVY WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAILER MOUNTED FLASHING ARROW PANEL
- PORTABLE CHANGEABLE MESSAGE SIGN
- FLAGGER
- SIGN POST

Posted Speed*	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Device		Minimum Sign Spacing X Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
30	L = WS ² / 60	150'	165'	180'	30'	60'-75'	120'
35		205'	225'	245'	35'	70'-90'	160'
40		265'	295'	320'	40'	80'-100'	240'
45	L = WS	450'	495'	540'	45'	90'-110'	320'
50		500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60		600'	660'	720'	60'	120'-150'	* 600'
65		650'	715'	780'	65'	130'-165'	* 700'
70	700'	770'	840'	70'	140'-175'	* 800'	

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

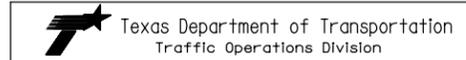
TYPICAL USAGE:

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES:**
- Unless otherwise stated in the plans, flags attached to signs are **REQUIRED**.
 - All traffic control devices illustrated are **REQUIRED**, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
 - Type III barricades are required on both sides of work area at all times. (See BC Standards for barricade details.)
 - Stockpiled material should be placed a minimum 30' from nearest traveled way.
 - On high speed facilities advance warning signs should be installed approximately 3X from the work area or from the beginning of a lane or shoulder taper. On low speed facilities the advance warning sign should be placed on the "X" minimum distance.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
 Traffic Operations Division - TE
 Texas Department of Transportation
 125 East 11th Street
 Austin, Texas 78701-2483
 Phone (512) 416-3335
 Fax (512) 416-3161
 E-mail TRF-STANDARD@mailgw.dot.state.tx.us



TRAFFIC CONTROL PLAN

TCP(2-1)-98

© TXDOT December 1985	DN: TXDOT	CK: TXDOT	DN: TXDOT	CK: TXDOT
2-94	CONT	SECT	JOB	HIGHWAY
8-95				
1-97	DIST	COUNTY		SHEET NO.
4-98				
161				

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869DTC01.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784



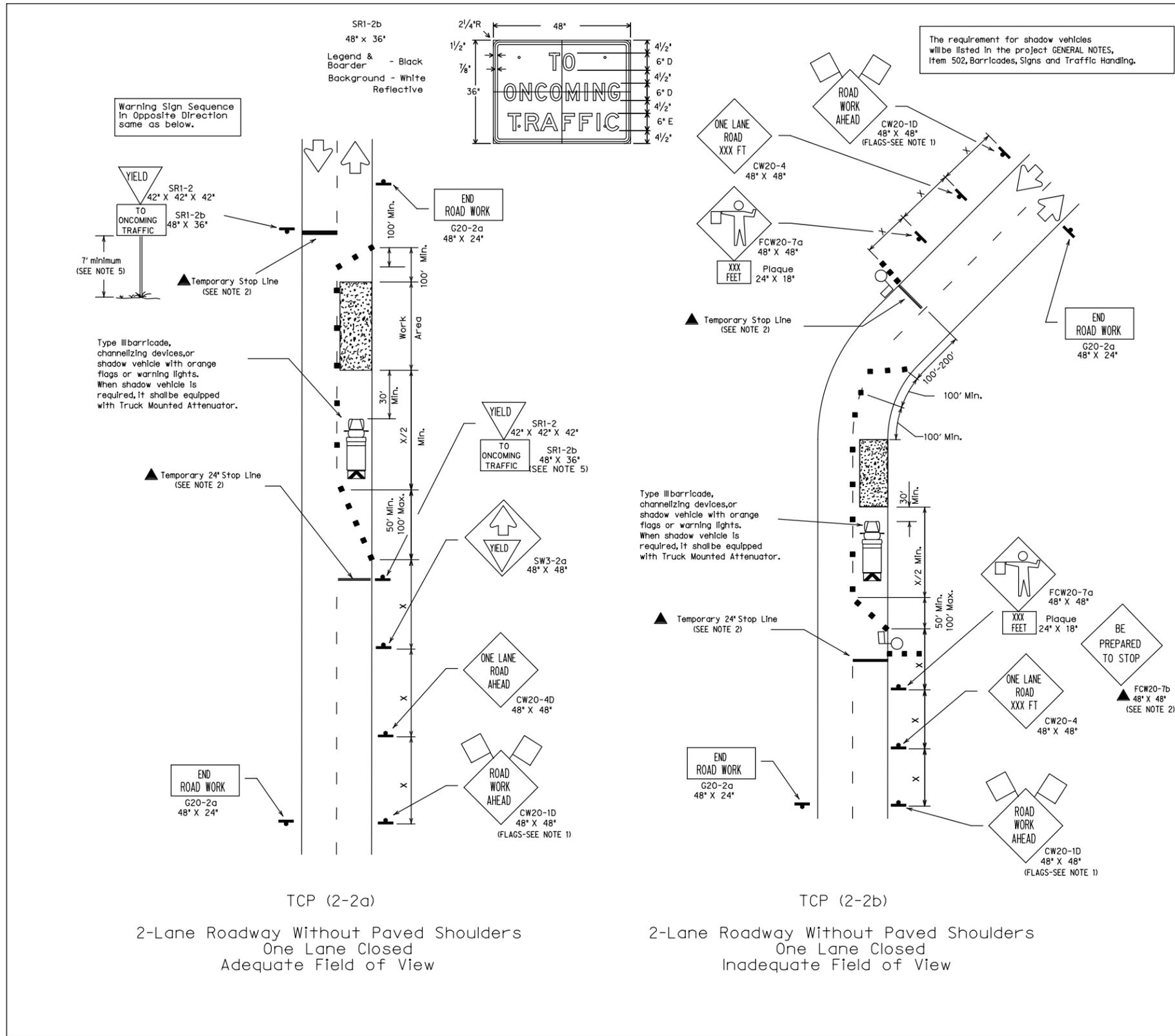
NAME: *Leigh A. Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312



TRAFFIC CONTROL PLAN DETAILS

PHASE V STREET RECONSTRUCTION

SHEET
 114
CITY BID No.
 69-11-15-PHASE V



LEGEND

- TYPE III BARRICADE
- CHANNELIZING DEVICES
- FLAG
- HEAVY WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAILER MOUNTED FLASHING ARROW PANEL
- PORTABLE CHANGEABLE MESSAGE SIGN
- FLAGGER
- SIGN POST

Posted Speed*	Formula	Minimum Destrable Taper Lengths #**			Suggested Maximum Spacing of Device		Minimum Sign Spacing Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
30	L = WS ² / 60	150'	165'	180'	30'	60'-75'	120'
35		205'	225'	245'	35'	70'-90'	160'
40	L=WS	265'	295'	320'	40'	80'-100'	240'
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50	L=WS	500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60	L=WS	600'	660'	720'	60'	120'-150'	* 600'
65		650'	715'	780'	65'	130'-165'	* 700'
70	L=WS	700'	770'	840'	70'	140'-175'	* 800'
75		750'	825'	900'	75'	150'-195'	* 900'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

TYPICAL USAGE:

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

- GENERAL NOTES:**
- Flags attached to signs are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
 - The BE PREPARED TO STOP sign may be installed after the ONE LANE ROAD XXX FT sign, but proper sign spacing shall be maintained.
 - YIELD sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work zones should be no longer than one half city block. In rural areas on roadways with less than 4000 ADT and work areas should be no longer than 400'.
 - YIELD TO ONCOMING TRAFFIC sign shall be placed on a support at a 7' minimum mounting height.
 - Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work area should be based on the ability of flaggers to communicate.
 - For Intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 10 feet is recommended. The 10 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP(2-2)-03

©TxDOT December 1985		DN: TXDOT	CK: TXDOT	DR: TXDOT	CG: TXDOT
8-95	REVISIONS	CONT	SECT	JOB	HIGHWAY
1-97					
4-98					
3-03		DIST	COUNTY	SHEET NO.	

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 Design
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NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869D\TTC02.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9874

STATE OF TEXAS
 LEIGH A. HOLLIS
 LICENSED PROFESSIONAL ENGINEER
 103573

NAME: *Leigh Hollis*
 DATE: 2/20/15
 TBPE FIRM #F-312

THE COLONY
 City by the Lake

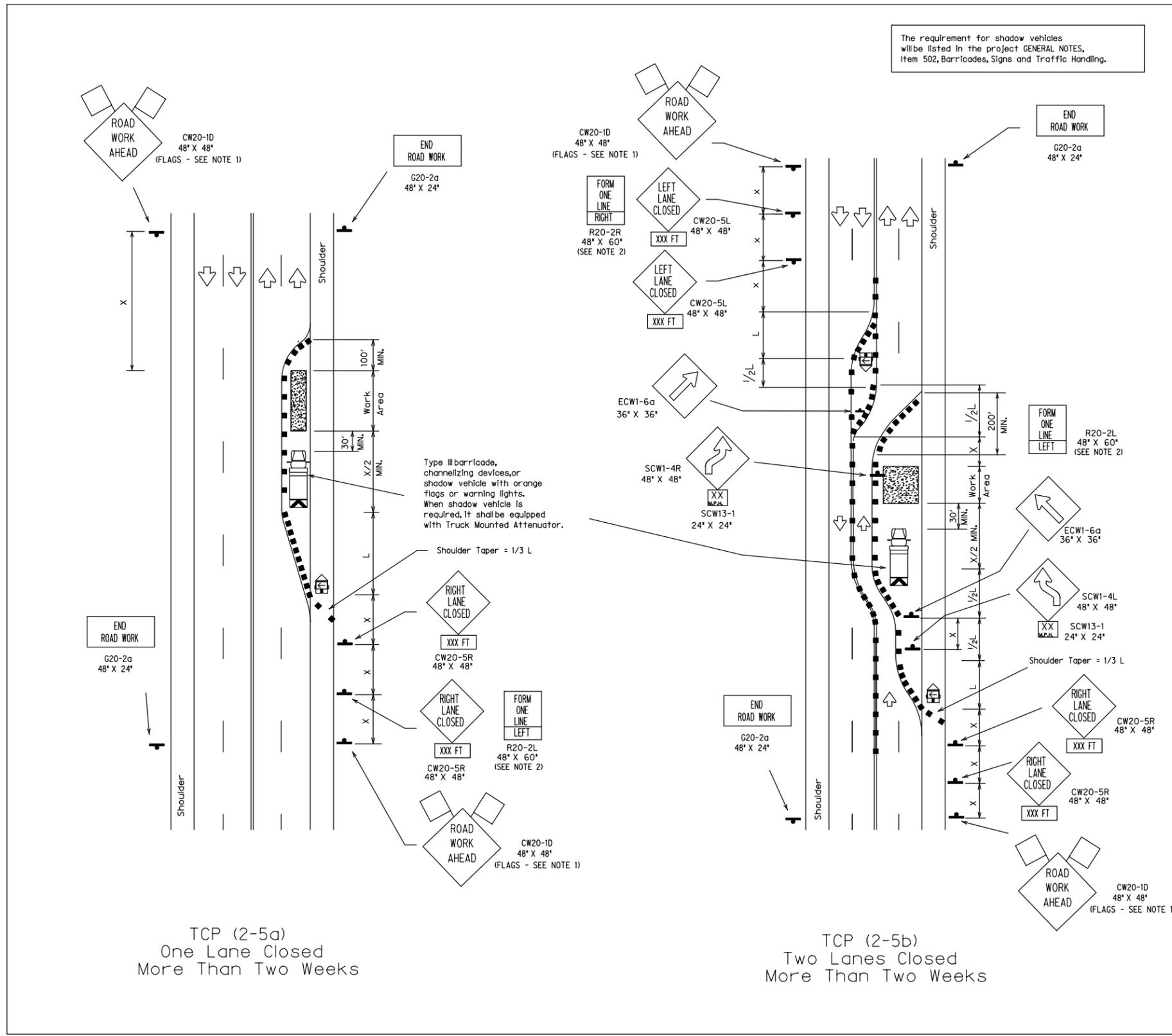
TRAFFIC CONTROL PLAN DETAILS

PHASE V STREET RECONSTRUCTION

SHEET
115

CITY BID No.
69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION



LEGEND

- TYPE III BARRICADE
- CHANNELIZING DEVICES
- FLAG
- HEAVY WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAILER MOUNTED FLASHING ARROW PANEL
- PORTABLE CHANGEABLE MESSAGE SIGN
- FLAGGER
- SIGN POST

Posted Speed*	Formula	Minimum Destrable Taper Lengths **			Suggested Maximum Spacing of Device		Minimum Sign Spacing X Distance
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45		450'	495'	540'	45'	90'-110'	320'
50	L = WS	500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60	L = WS	600'	660'	720'	60'	120'-150'	* 600'
65		650'	715'	780'	65'	130'-165'	* 700'
70	L = WS	700'	770'	840'	70'	140'-175'	* 800'
75		750'	825'	900'	75'	150'-190'	* 900'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

TYPICAL USAGE:

	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
MOBILE				

- GENERAL NOTES:
- Unless otherwise stated in the plans, flags attached to signs are REQUIRED.
 - The FORM ONE LINE LEFT (or RIGHT) sign may be used following the RIGHT (or LEFT) LANE CLOSED XXX FT sign. Spacing distance between signs should be the minimum distance indicated.
 - When the work zone will be in place more than two weeks, conflicting pavement markings shall be removed. New markings shall be installed and maintained to the satisfaction of the Engineer.
 - Downstream taper is optional. When used, it should be 100' minimum length per lane.
 - For intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 10 feet is recommended. The 10 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.

Texas Department of Transportation
 Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP(2-5)-03

©TXDOT December 1985	DN TXDOT	OK TXDOT	DN TXDOT	OK TXDOT
8-95 REVISIONS	CONT	SECT	JOB	HIGHWAY
1-97				
4-98				
3-03	DIST	COUNTY		SHEET NO.

165

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 Design
 PDF 2D MON FW MR 600.plt

NO.	REVISION	BY	DATE

HALFF DESIGNED	SCALE
CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869DTTC03.dgn

HALFF
 FIRM REGISTRATION NO. 312
 4000 FOSSIL CREEK BLVD
 FORT WORTH, TEXAS 76137-2797
 TEL (817) 847-1422
 FAX (817) 232-9784

LEIGH A. WOLLIS
 LICENSED PROFESSIONAL ENGINEER
 103573

NAME: *Leigh A. Wollis*
 DATE: 2/20/15
 TBPE FIRM *F-312

THE COLONY
 City by the Lake

TRAFFIC CONTROL PLAN DETAILS

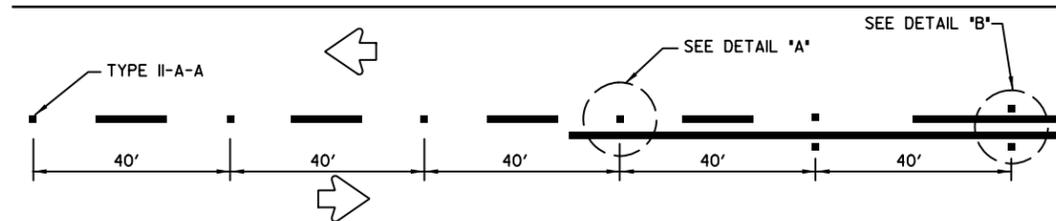
PHASE V STREET RECONSTRUCTION

SHEET 116

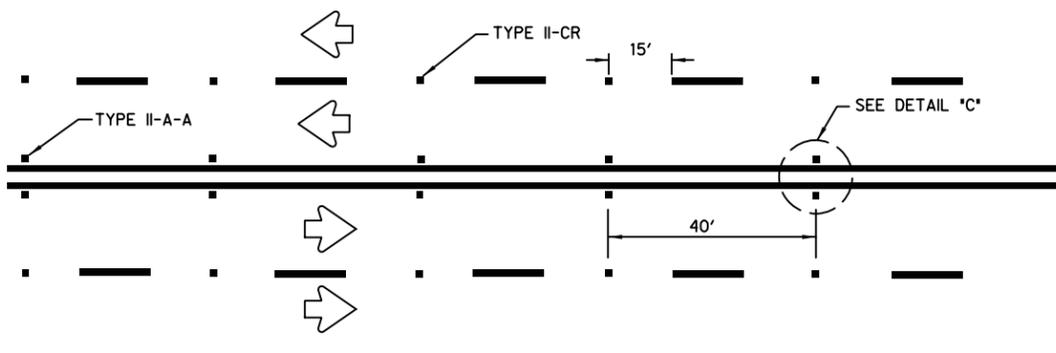
CITY BID No. 69-11-15-PHASE V

REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

RAISED PAVEMENT MARKERS (REFLECTORIZED)

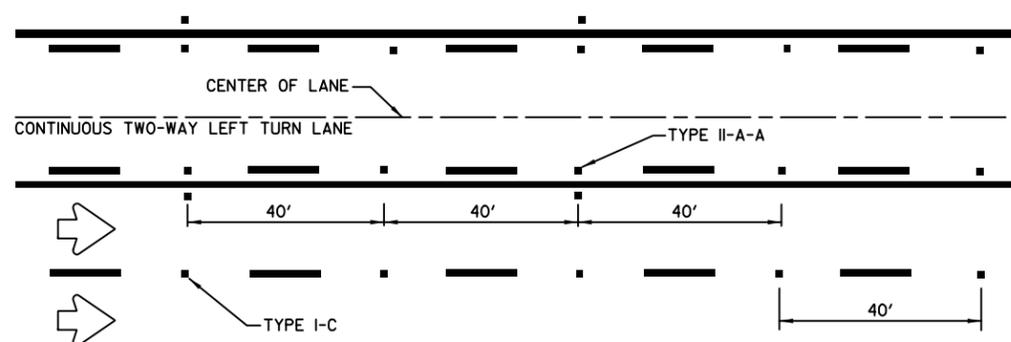


CENTERLINE FOR ALL TWO LANE ROADWAYS

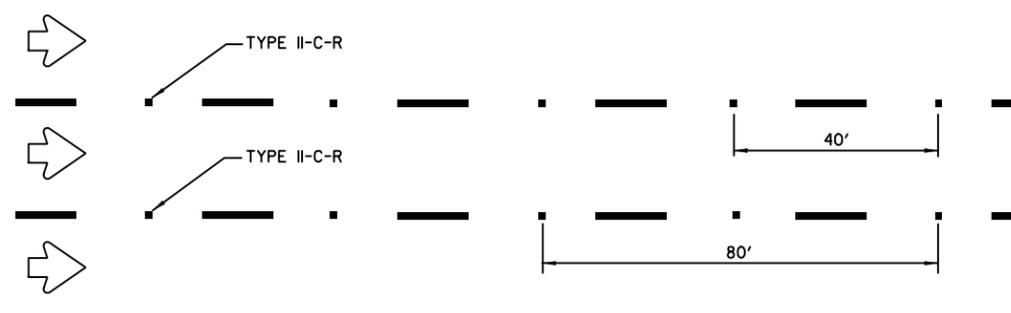


CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS

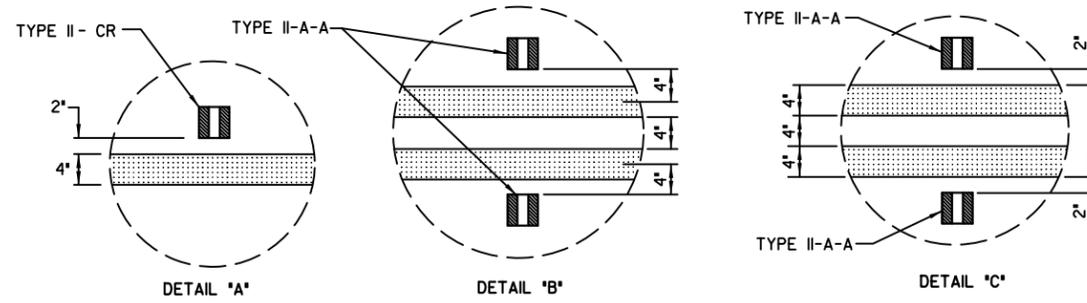
Raised pavement marker TYPE II-CR, clear/red face toward normal traffic, shall be placed on 40-foot centers.



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)



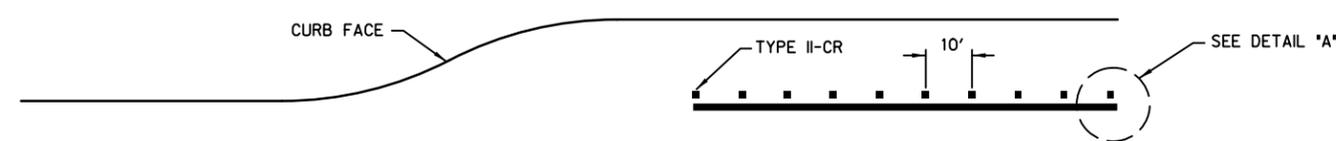
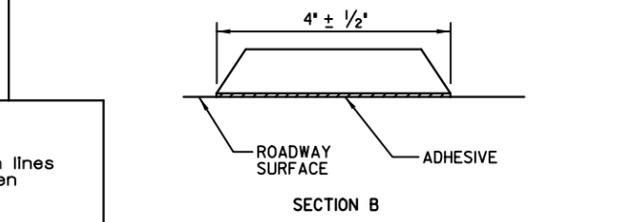
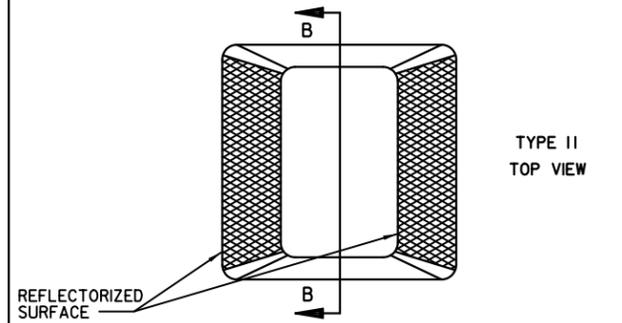
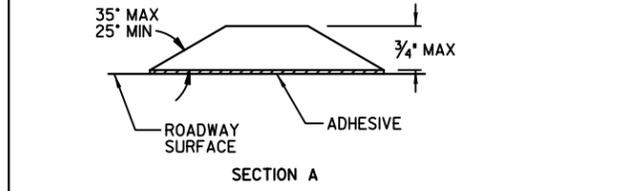
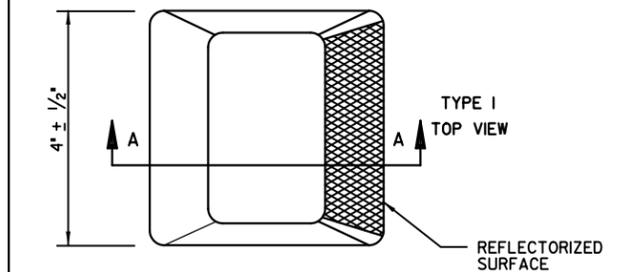
Raised pavement markers TYPE II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.
TYPE I-C markers may be used in place of TYPE II-CR markers at the discretion of the Engineer.

GENERAL NOTES:

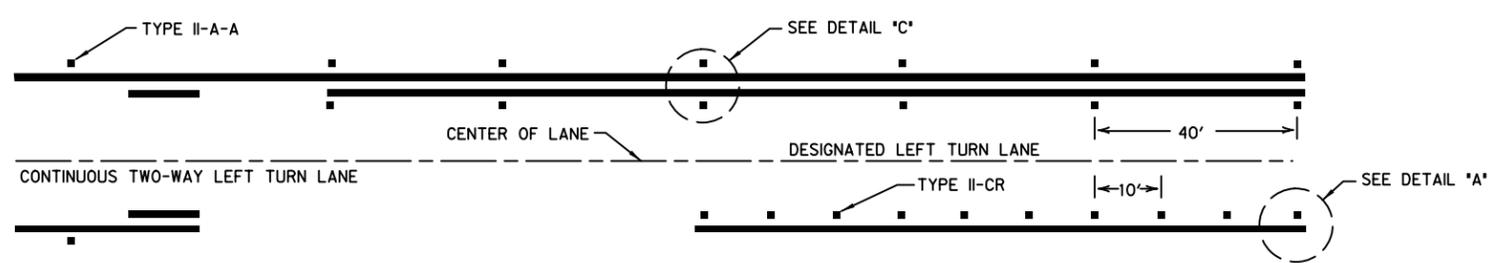
- All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to the same side of the longitudinal joints as the lane line.
- All pavement markers installed on concrete shall be installed using Epoxy adhesive.
- All pavement markers installed on asphalt shall be installed using Bituminous adhesive.
- All pavement marking materials shall meet the Texas Department of Transportation Material Specifications as specified by the plans.

SPECIFICATION REFERENCE TABLE MATERIAL SPECIFICATIONS

PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130



LANE LINES FOR DESIGNATED TURN LANES



LANE LINES FOR DESIGNATED TURN LANES IN A SHARED TWO-WAY TURN LANE



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

CERTIFICATION:

THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

PAVEMENT MARKING STANDARD DETAILS

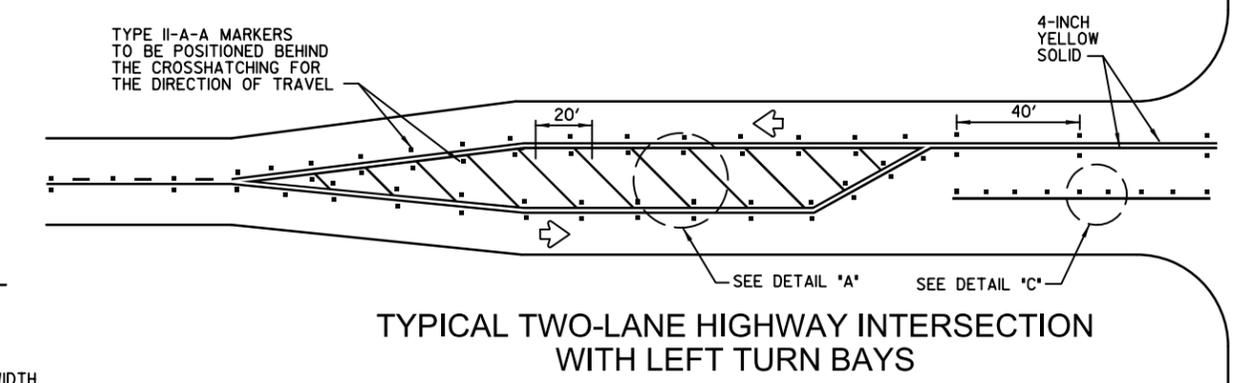
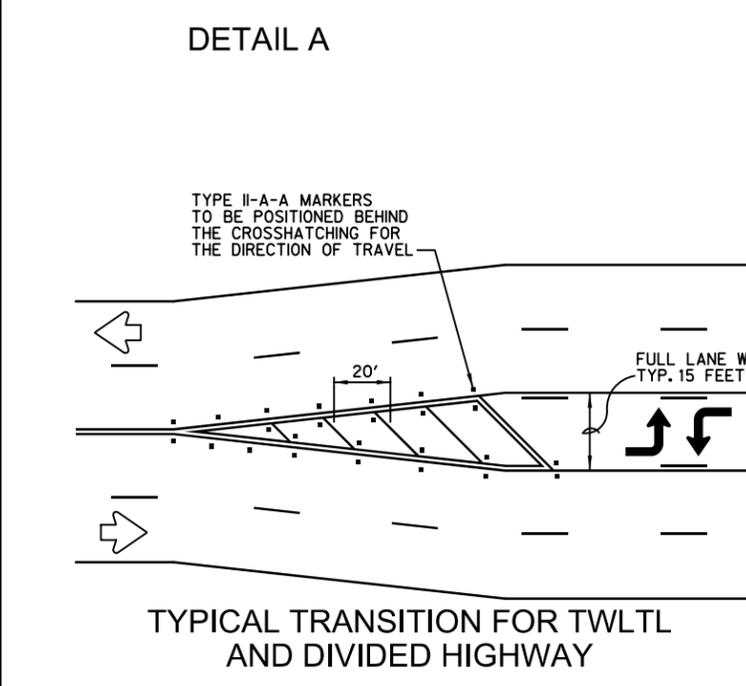
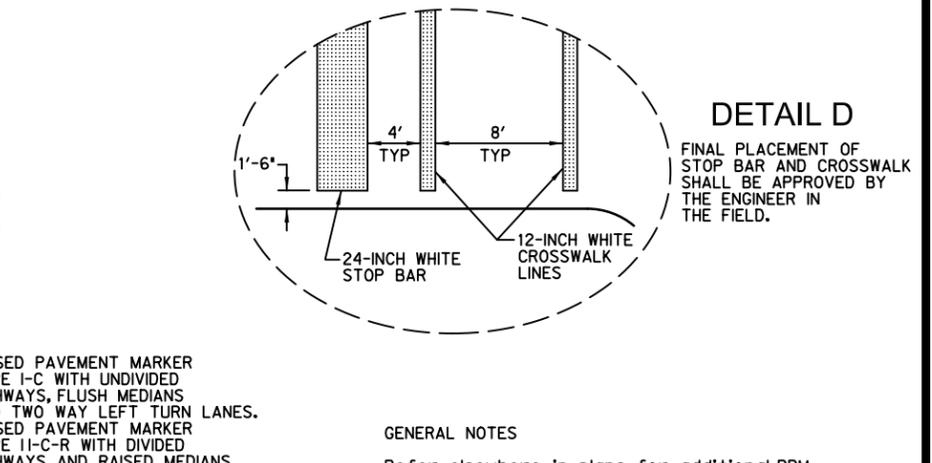
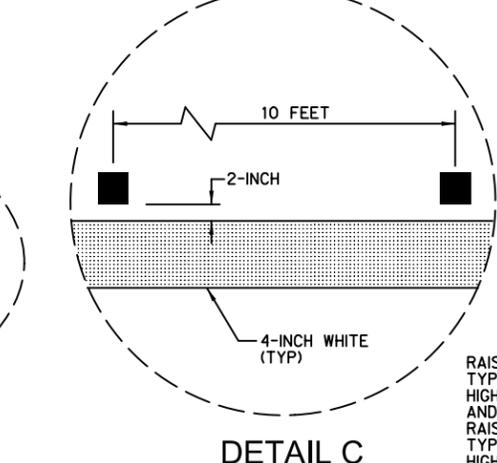
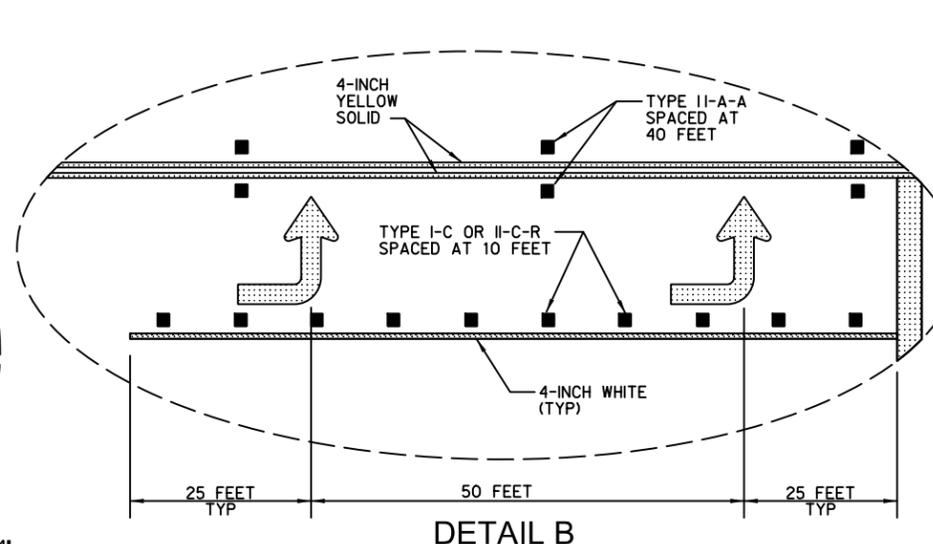
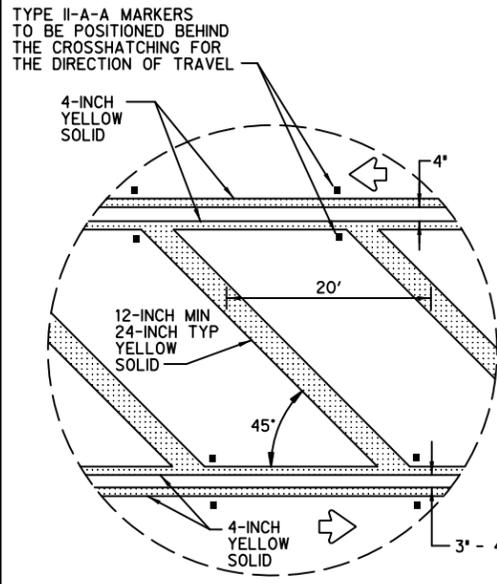
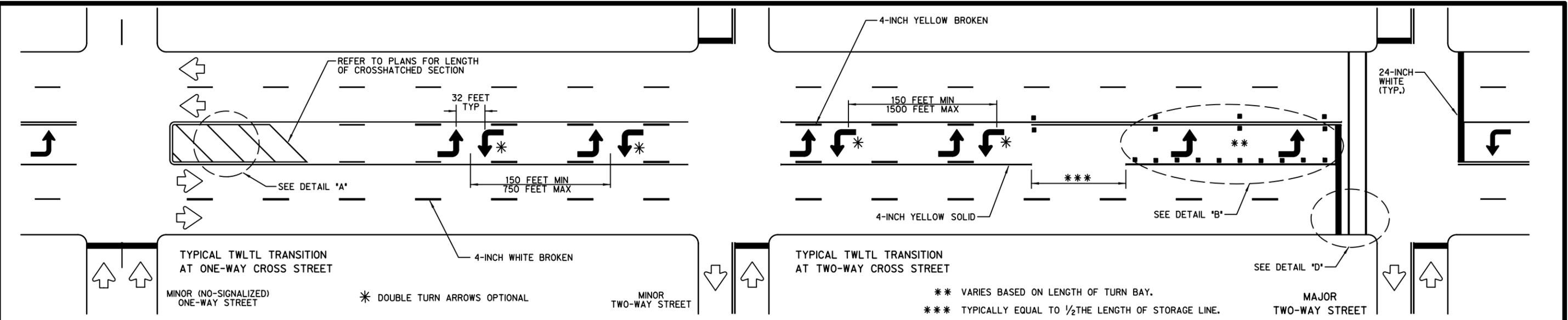
TURN LANE AND TRANSVERSE MARKINGS



THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	PM-1	117



RAISED PAVEMENT MARKER TYPE I-C WITH UNDIVIDED HIGHWAYS, FLUSH MEDIANS AND TWO WAY LEFT TURN LANES. RAISED PAVEMENT MARKER TYPE II-C-R WITH DIVIDED HIGHWAYS AND RAISED MEDIANS.

GENERAL NOTES

Refer elsewhere in plans for additional RPM placement and details. Details for words and arrows as shown on other sheets.

All pavement marking materials shall meet the Texas Department of Transportation Material Specifications as specified by the plans.

For a left turn bay less than 100 feet in length two arrows shall be used.

For a left turn bay greater than 100 feet in length three arrows shall be used. Spacing to be determined by Engineer.

Other crosswalk patterns as shown in the 'Texas Manual on Uniform Traffic Control Devices' may be used.

SPECIFICATION REFERENCE TABLE

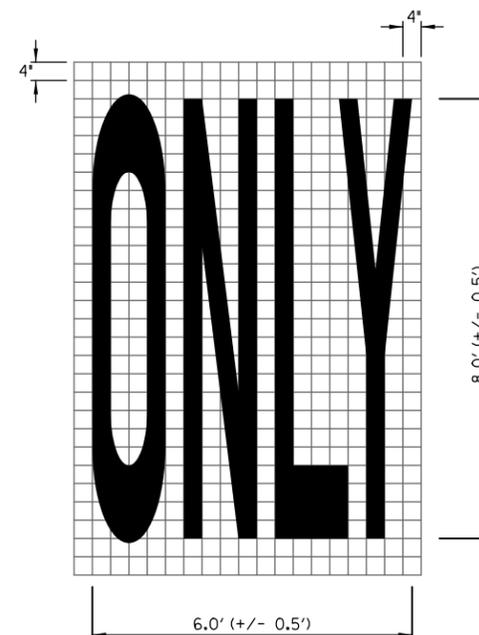
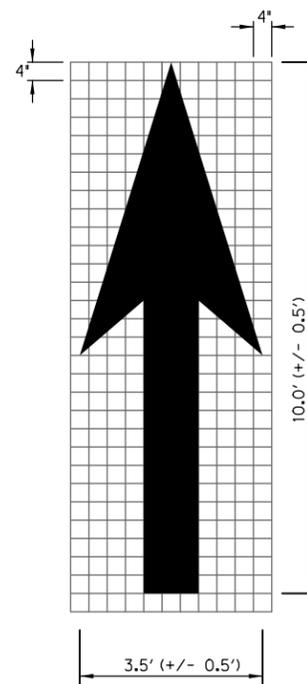
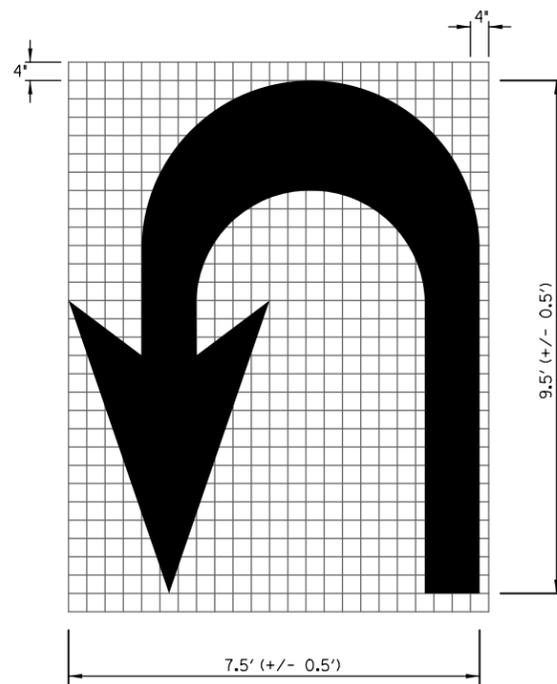
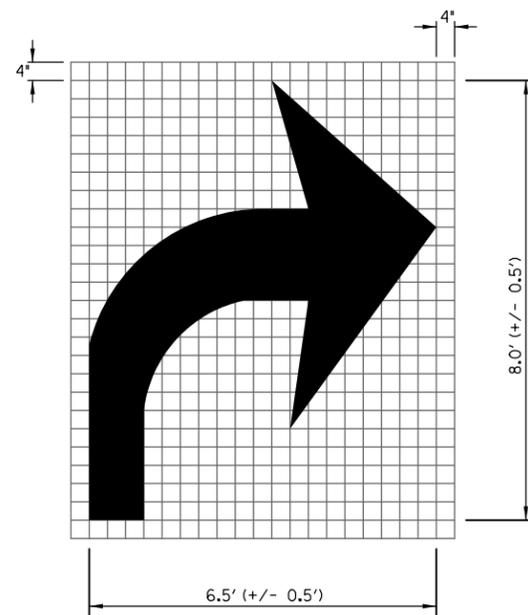
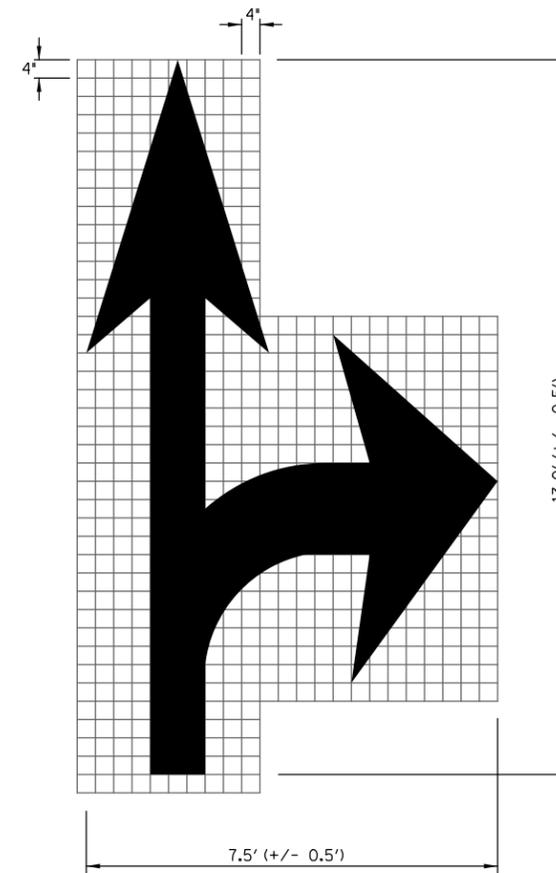
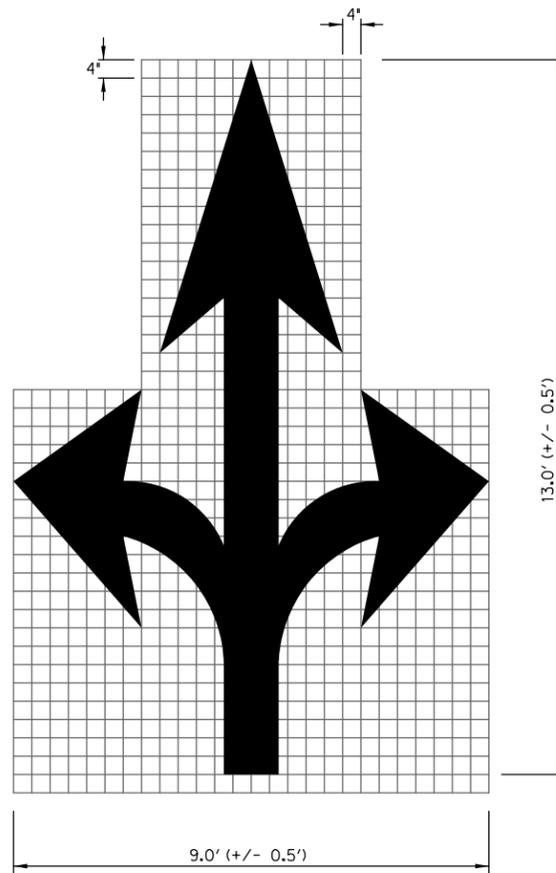
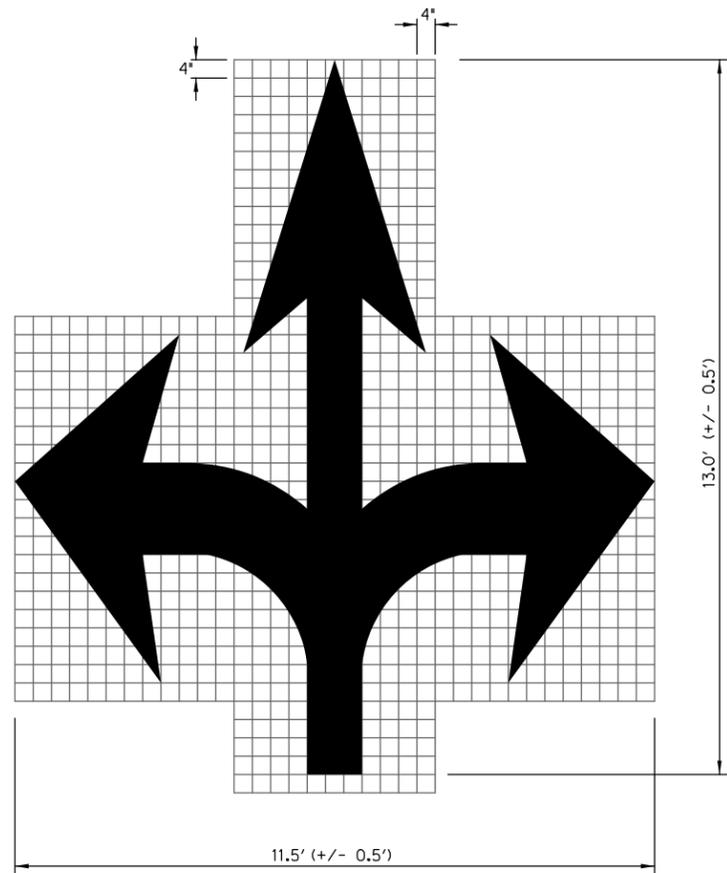
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130

PAVEMENT MARKING STANDARD DETAILS						
TWO-WAY LEFT TURN LANES AND LEFT TURN BAYS						
<p>THE CITY OF THE COLONY TEXAS</p> <p>ENGINEERING DEPARTMENT</p>						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
-----	-----	-----	MARCH 21 2007	N.T.S.	PM-2	118

CERTIFICATION:

THIS CITY OF THE COLONY STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF THE COLONY.

NAME: Leigh A. Hollis
 DATE: 2/20/15
 TBPE FIRM #F-312



GENERAL NOTES:

- Minimum 8 foot white markings should be used, unless otherwise noted. If message consists of more than one word, it should be placed with first word nearest the driver.
- These details are standard size for normal installation; sizes may be reduced approximately one-third for low speed urban conditions; larger sizes may be needed for freeways, above average speed conditions or other critical locations.
- The longitudinal space between markings should be at least four times the height of the markings, on low speed roads, but should not exceed ten times the height under any condition.
- Markings considered appropriate for use when warranted include the following:
 - A. Regulatory
STOP
RIGHT (LEFT) TURN ONLY
25 MPH
SYMBOL ARROWS
 - B. Warning
STOP AHEAD
SIGNAL AHEAD
SCHOOL
SCHOOL X-ING
PED X-ING
R X R (see RCPM standard)
 - C. Guide
US XXX
ROUTE XXX
STATE XXX
Other words or symbols may be necessary under certain conditions
- Uncontrolled use of pavement markings can result in driver confusion. Word and symbol markings should be no more than three lines.
- The word "STOP" shall not be used on the pavement unless accompanied by a Stop line and Stop sign. The word "STOP" shall not be placed on the pavement in advance to a stop line, unless every vehicle is required to stop at all times.
- Pavement markings should generally be no more than one lane in width, with School messages being the exception. For details of School and School crossing pavement markings, refer to Part VII of the "Texas Manual on Uniform Traffic Control Devices".
- Spacing between letters should be approximately 4 inches. The width of letters may vary depending on the width of the travel lanes.
- Lane-Use arrow markings may be used to convey either guidance or mandatory messages. Arrows used to convey a mandatory movement must be accompanied by standard signs and the pavement marking word "ONLY".
- Pavement markings are to be located as specified elsewhere in the plans.

SPACING BETWEEN LINES OF PAVEMENT MARKING	
MPH	SPACING
≤ 45	MINIMUM 4 TIMES THE LETTER HEIGHT
> 45	MINIMUM - 4 TIMES THE LETTER HEIGHT MAXIMUM - 10 TIMES THE LETTER HEIGHT

PAVEMENT MARKING STANDARD DETAILS

LEGENDS AND ARROWS



THE CITY OF THE COLONY
TEXAS

ENGINEERING DEPARTMENT



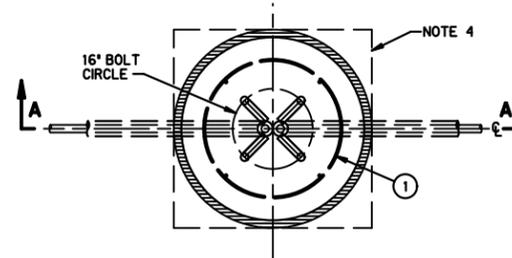
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NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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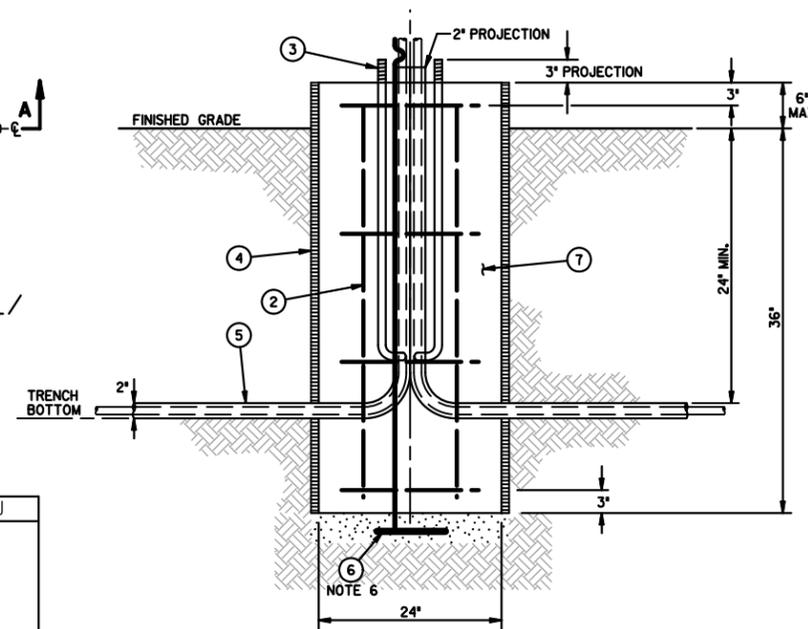
NOTES:

1. CONCRETE TO BE A MINIMUM 3000 PSI AT 28 DAYS. (5 SACK) MAXIMUM AGGREGATE 3/4". TOP OF FOUNDATION TO BE TROWELED TO A FLAT AND LEVEL SURFACE. AVOID EXCESSIVE TROWELING. CONCRETE TO SET A MINIMUM OF 72 HOURS BEFORE POLE INSTALLATION.
2. REBAR HOOPS ARE TIED BEGINNING 3" BELOW TOP OF CONCRETE FORM AND ARE REPEATED AT APPROXIMATE 1 FT. INTERVALS TO BOTTOM OF FOUNDATION.
3. ANCHOR BOLTS TO BE SUPPLIED WITH POLE. USE TEMPLATE FURNISHED BY POLE MANUFACTURER FOR ALIGNING ANCHOR BOLTS.
4. CONCRETE FORM OF SONOTUBE TO EXTEND TO BOTTOM OF TRENCH OR AS NEEDED. FORMS FOR SQUARE BASE (EG. TEXAN POLE) POLE FOUNDATION SHOULD BE FABRICATED AS NECESSARY.
5. PROVIDE 24" PIGTAIL FOR CONNECTION OF GROUND WIRE TO POLE.
6. A MINIMUM OF 12' OF BARE #6 SD CU WIRE TO BE PLACED IN BOTTOM OF HOLE AND COVERED WITH 2" OF DIRT
7. IF SOIL HAS BEEN DISTURBED. EXTEND FOUNDATION BY DEPTH OF DISTURBED SOIL.



STREET LIGHT FOUNDATION
12' M.H. & 17' M.H. HISTORICAL/
DECORATIVE POLES
PLAN VIEW
SCALE: NONE

ITEM	QTY	DESCRIPTION	TSN / REF	CU	MU
1	4	#3 REBAR, 18 IN. DIAMETER HOOP, 3 IN. OVERLAP	314470		
2	4	#5 REBAR, STRAIGHT, 36 IN. LONG	317821		
3	4	ANCHOR BOLT, GALVANIZED 3/4 IN. (SUPPLIED W /POLE)	313575		
4	AS REQD.	CONCRETE FOUNDATION TUBE, 24 IN. DIAMETER	313841	SLF11	
5	AS REQD.	2-INCH CONDUIT, PVC OR PEC (NOT IN FOUNDATION CU)			
6	2 LB	WIRE, #6 COPPER SOLID, GROUND, POLE BUTT WIRE COIL	303244		
7	AS REQD.	CONCRETE			



SECTION "A-A"
SCALE: NONE

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NO.	REVISION	BY	DATE

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CADD DRAWN	AS NOTED
B.L.M. CHECKED	AVO: 30537
	FILE: 27869D\TLP01.dgn

HALFF
FIRM REGISTRATION NO. 312
4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS 76137-2797
TEL (817) 847-1422
FAX (817) 232-9784



NAME: *Leigh A. Hollis*
DATE: 2/20/15
TBPE FIRM #F-312



LIGHTING DETAILS	SHEET 120
PHASE V STREET RECONSTRUCTION	CITY BID No. 69-11-15-PHASE V

PHASE IV STREET RECONSTRUCTION